

Match level :

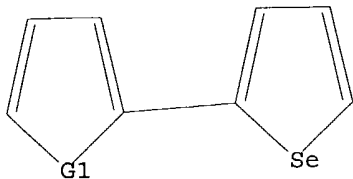
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom

L1 STRUCTURE UPLOADED

=&gt; d l1

L1 HAS NO ANSWERS

L1 STR



G1 Se,O,S,N,NH

Broad search

Structure attributes must be viewed using STN Express query preparation.

=&gt; s l1

SAMPLE SEARCH INITIATED 14:54:13 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 40 TO ITERATE

100.0% PROCESSED 40 ITERATIONS  
SEARCH TIME: 00.00.01

5 ANSWERS

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*PROJECTED ITERATIONS: 421 TO 1179  
PROJECTED ANSWERS: 5 TO 234

L2 5 SEA SSS SAM L1

=&gt; s l1 sss full

FULL SEARCH INITIATED 14:54:20 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 761 TO ITERATE

100.0% PROCESSED 761 ITERATIONS  
SEARCH TIME: 00.00.01

133 ANSWERS

L3 133 SEA SSS FUL L1

=&gt; fila caplus

FILA IS NOT A RECOGNIZED COMMAND

The previous command name entered was not recognized by the system.  
For a list of commands available to you in the current file, enter  
"HELP COMMANDS" at an arrow prompt (=>).

=&gt; file caplus

COST IN U.S. DOLLARS

FULL ESTIMATED COST

SINCE FILE

ENTRY

155.42

TOTAL

SESSION

155.63

FILE 'CAPLUS' ENTERED AT 14:54:43 ON 17 JUN 2004  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
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FILE COVERS 1907 - 17 Jun 2004 VOL 140 ISS 25  
FILE LAST UPDATED: 16 Jun 2004 (20040616/ED)

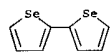
This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l3

L4 60 L3

=> d ibib abs hitstr tot

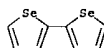
L4 ANSWER 1 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 2003:644758 CAPLUS  
 DOCUMENT NUMBER: 139:365349  
 TITLE: Synthesis, characterization and electrochemical properties of polybiselenophene  
 AUTHOR(S): Ong, Teng-Teng; Ng, Siu-Choon; Chan, Hardy S. O.  
 CORPORATE SOURCE: Department of Chemistry, National University of Singapore, Singapore, Singapore  
 SOURCE: Polymer (2003), 44(19), 5597-5603  
 CODEN: POLMAG; ISSN: 0032-3861  
 PUBLISHER: Elsevier Science Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB A novel elec. conducting polymer consisting of selenophene moiety, poly(biselenophene) (PBSE) was generated by chemical and electrochem. polymerization. This polymer gave lower bandgap energy (1.9 eV) than pristine polyselenophene (2.0 eV). The electrochem. and optical properties of PBSE was investigated by UV-Vis near IR spectroscopy and electrochem. In situ electrochem. doping studies of PBSE showed the formation of polaron states at 1.4 and 0.8 eV. Through cyclic voltammetry, the polymer oxidation potential (Epa) and reduction potential (Epc) for p-doping process for PBSE were observed at 0.93 and 0.86 V, resp., at a scan rate of 20 mV s<sup>-1</sup>. Upon chemical doping using chemical reagents such as iodine and ferric chloride, a maximum conductivity of 0.1 S cm<sup>-1</sup> was achieved.  
 IT 6239-48-1P, 2,2'-Biselenophene  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 of (monomer; synthesis and characterization and electrochem. properties of polybiselenophene)  
 RN 6239-48-1 CAPLUS  
 CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)



IT 95831-28-0P  
 RL: MOA (Modifier or additive use); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)  
 of (synthesis and characterization and electrochem. properties of polybiselenophene)  
 RN 95831-28-0 CAPLUS  
 CN 2,2'-Biselenophene, homopolymer (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 6239-48-1

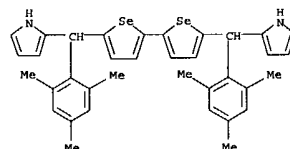
L4 ANSWER 2 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 2003:453594 CAPLUS  
 DOCUMENT NUMBER: 139:245994  
 TITLE: meso-substituted aromatic 34 $\pi$  core-modified octaphyrins: Syntheses, characterization and anion binding properties  
 AUTHOR(S): Anand, Venkataramanarao G.; Venkatraman, Sundararaman;  
 Rath, Harapriya; Chandrashekar, Tavarekere K.; Teng, Weijie; Ruhlandt-Senge, Karin  
 CORPORATE SOURCE: Department of Chemistry, Indian Institute of Technology, Kanpur, 208016, India  
 SOURCE: Chemistry - A European Journal (2003), 9(10),  
 2282-2290  
 CODEN: CEUJED; ISSN: 0947-6539  
 PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 139:245994  
 AB Modified octaphyrins with 34 $\pi$  electrons have been synthesized and characterized following a simple synthetic methodol. An acid-catalyzed  $\alpha,\alpha$  coupling of tetrapyrroles containing furan, thiophene and selenophene rings resulted in the formation of the resp. octaphyrins in relatively good yield. Solution studies by <sup>1</sup>H NMR and 2D NMR methods and single crystal X-ray structural characterization reveal an almost flat structure with two heterocyclic rings inverted. Specifically, in on product two selenophene rings (one on each biselenophene unit) are inverted while in another product two furan rings (one on each bifuran unit) are inverted when the meso substituent are mesityl groups. On changing the mesityl substituent to m-xylol group in one of the compound, the location of ring inversion shifts to pyrrole rings (one on each bipyrrole unit) indicating the dependence of structure on the meso substituents. UV/Vis studies, both in free base and protonated forms reveal typical porphyrinic character and the aromatic nature of the octaphyrins. The  $\Delta\epsilon$  values evaluated by <sup>1</sup>H NMR spectroscopy also support their aromatic nature. The protonated forms of octaphyrins bind TFA anion in a 1:2 ratio. The TFA anions are located one above and below the plane of the octaphyrin macrocycle and they are held by weak electrostatic N-H...O interactions similar to that observed for protonated rubyrins. However, in the present case, there is an addnl. non-electrostatic C-H...O interaction involving B-CH of the inverted heterocyclic ring and the carbonyl oxygen of the TFA. Furthermore, inter mol. interactions between the C-H of the meso-mesityl group and the fluorine of CP3 group of bound TFA leads to the formation of one-dimensional supramol. arrays with interplanar distance of 13 Å between two octaphyrins.  
 IT 365279-93-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 of (preparation, structure, and anion binding property of meso-substituted aromatic 34 $\pi$  core-modified octaphyrins from acid-catalyzed coupling of furan-, thiophene- or selenophene-containing tetrapyrroles)  
 RN 365279-93-2 CAPLUS  
 CN 1H-Pyrrole, 2,2'-[[2,2'-biselenophene]-5,5'-diylbis[(2,4,6-trimethylphenyl)methylene]]bis- (9CI) (CA INDEX NAME)

L4 ANSWER 1 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 CMF C8 H6 Se2



REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L4 ANSWER 2 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



REFERENCE COUNT: 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

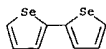
L4 ANSWER 3 OF 60 CAPLUS COPYRIGHT 2004 ACS ON STN  
 ACCESSION NUMBER: 2003:173091 CAPLUS  
 DOCUMENT NUMBER: 138:228360  
 TITLE: Method of manufacturing a structured conducting polymer layer  
 INVENTOR(S): Becker, Eike; Johannes, Hans-Hermann; Kowalsky, Wolfgang  
 PATENT ASSIGNEE(S): Technische Universitaet Braunschweig, Germany  
 SOURCE: Eur. Pat. Appl., 12 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1289031	A2	20030305	EP 2002-400038	20020821
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
DE 10140666	A1	20030313	DE 2001-10140666	20010824
DE 10140666	C2	20030821		
US 2003052015	A1	20030320	US 2002-225054	20020821
PRIORITY APPL. INFO.: DE 2001-10140666 A 20010824				

AB A procedure is described for the production of a conducting structured polymer film using two-layered anode for the electrochem. polymerization. The lower layer consists of a non-conducting material, on which a conductive electrode layer is applied with a specified structure corresponding to the structure of the structured polymer films. The anode with a platinum cathode are in electrolytes, into which low mol. compds. are introduced, preferably monomers of the polymer film which can be formed. The current flows between the anode and the cathode in electrolyte solns. The structured polymer film is formed on a non-conductive substrate layer. The electrode will not be damaged and can be used again for the new structured polymer film. In this way conductive structured polymer films could be manufactured in mass production.

IT **6239-48-1, 2,2'-Biselenophene 119507-82-3**  
**130236-56-5 146580-93-0**  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (method of manufacturing a structured conducting polymer layer by electrochem. polymerization of monomers)

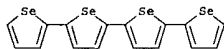
RN 6239-48-1 CAPLUS  
 CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)



L4 ANSWER 4 OF 60 CAPLUS COPYRIGHT 2004 ACS ON STN  
 ACCESSION NUMBER: 2002:931889 CAPLUS  
 DOCUMENT NUMBER: 138:129549  
 TITLE: Organic Field-Effect Transistor Using oligoselenophene  
 AUTHOR(S): as an Active Layer  
 Kunugi, Yoshihito; Takimiya, Kazuo; Yamane, Kiwamu; Yamashita, Kazuo; Aso, Yoshio; Otsubo, Tetsuo  
 CORPORATE SOURCE: Faculty of Integrated Arts and Sciences, Hiroshima University, Higashi-Hiroshima, 739-8521, Japan  
 SOURCE: Chemistry of Materials (2003), 15(1), 6-7  
 CODEN: CMATEX; ISSN: 0897-4756  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB A 2,2':5',2'':5'',2'''-quaterseleophene-based organic FET, showing good FET behavior, is reported. A 50-nm thick film of selenophene was vacuum-deposited onto the Si/SiO<sub>2</sub> substrate. The transistor showed p-channel characteristics. The best mobility 3.6×10<sup>-3</sup> cm<sup>2</sup>V<sup>-1</sup>s<sup>-1</sup> was obtained for the oligoselenophene film prepared at a substrate temperature 60°C.

IT **188905-11-5, 2,2':5',2'':5'',2'''-Quaterseleophene**  
 RL: DEV (Device component use); USES (Uses)  
 (organic FET using oligoselenophene as active layer)

RN 188905-11-5 CAPLUS  
 CN 2,2':5',2'':5'',2'''-Quaterseleophene (9CI) (CA INDEX NAME)



REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE REFORMAT

L4 ANSWER 3 OF 60 CAPLUS COPYRIGHT 2004 ACS ON STN (Continued)  
 RN 119507-82-3 CAPLUS  
 CN Thiophene, 2-(selenophene-2-yl)- (9CI) (CA INDEX NAME)



RN 130236-56-5 CAPLUS  
 CN Furan, 2-selenophene-2-yl- (9CI) (CA INDEX NAME)



RN 146580-93-0 CAPLUS  
 CN 1H-Pyrrole, 2-selenophene-2-yl- (9CI) (CA INDEX NAME)



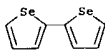
L4 ANSWER 5 OF 60 CAPLUS COPYRIGHT 2004 ACS ON STN  
 ACCESSION NUMBER: 2002:509543 CAPLUS  
 DOCUMENT NUMBER: 137:247536  
 TITLE: 30% Aromatic Meso-Substituted Heptaphyrin Isomers: Syntheses, Characterization, and Spectroscopic Studies  
 AUTHOR(S): Anand, Venkataramanarao G.; Pushpan, Simi K.; Venkatraman, S.; Narayanan, Seenichamy Jeyaprakash; Dey, Abhishek; Chandrashekar, Tavarekere K.; Roy, Raja; Joshi, Bhavani S.; Deepa, S.; Sastry, G. Narahari  
 CORPORATE SOURCE: Department of Chemistry, Indian Institute of Technology, Kanpur, India  
 SOURCE: Journal of Organic Chemistry (2002), 67(18), 6309-6319  
 CODEN: JOCEAH; ISSN: 0022-3263  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 137:247536  
 GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

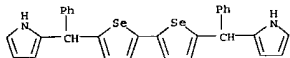
AB The syntheses of new aromatic 30% heptaphyrins either through a [5 + 2] or a [4 + 3] acid-catalyzed condensation and oxidative coupling reactions of easily available and air-stable precursors are reported. The methodology followed is not only simple and efficient but also allows synthesis of a range of heptaphyrins with different heteroatoms in the core. The oxidative coupling reactions of modified tripyrranes I and tetrapyrroles II were found to be dependent on the acid concentration used and as well as the substituents present on the meso position. The change of meso aryl substituents in I and II to meso mesityl substituents gave a new heptaphyrin III. The structural characterization has been done with extensive 1H and 2D NMR studies. The heptaphyrins reported here show rich structural diversity when the connections of the heterocyclic rings are altered, and accordingly, one ring and two ring inversions have been observed. By a judicious choice of the precursors it has been possible to control the site of ring inversion either in the bithiophene unit or in the tripyrrane unit. Theor. calcs. performed on three different heptaphyrins also reveal that the inverted structures are approx. 35-40 kJ lower in energy relative to the corresponding non-inverted structures. Furthermore, one of the heptaphyrins IV shows the presence of two conformers in solution in the ratio 1:2 and no interconversion between the conformers have been observed in the temperature range of 343-228 K. On protonation, the aromaticity and the ring inversions are retained and the Δε values vary in the range 10.07-20.59 ppm. The energies of the Soret maxima and the HOMO-LUMO gap vary linearly with the increase in π electrons further justifying the aromatic nature of the heptaphyrins.

IT **6239-48-1, 2,2'-Biselenophene 114725-87-6**  
 RL: RCT (Reactant); RACT (Reactant or reagent)

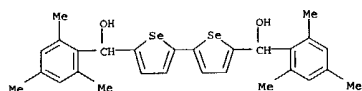
L4 ANSWER 5 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
(syntheses, characterization, and spectroscopic studies of 30% arom.  
meso-substituted heptaphyrin isomers)  
RN 6239-48-1 CAPLUS  
CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 314725-87-6 CAPLUS  
CN 1H-Pyrrole, 2,2'-[(2,2'-biselenophene)-5,5'-diylbis(phenylmethylene)]bis-  
(9CI) (CA INDEX NAME)

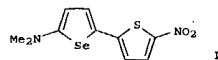


IT 460753-72-4P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(syntheses, characterization, and spectroscopic studies of 30%  
aromatic meso-substituted heptaphyrin isomers)  
RN 460753-72-4 CAPLUS  
CN [2,2'-Biselenophene]-5,5'-dimethanol,  $\alpha,\alpha'$ -bis(2,4,6-  
trimethylphenyl)- (9CI) (CA INDEX NAME)

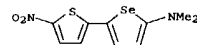


REFERENCE COUNT: 56 THERE ARE 56 CITED REFERENCES AVAILABLE FOR  
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L4 ANSWER 6 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 2002:439813 CAPLUS  
DOCUMENT NUMBER: 137:310772  
TITLE: Preparation and characterization of several new  
N-disubstituted 2-aminoselenophene derivatives  
AUTHOR(S): Zug, Ines; Hartmann, Horst  
CORPORATE SOURCE: Dept. of Chemistry, Univ. of Applied Sciences,  
Merseburg, D-06217, Germany  
SOURCE: Zeitschrift fuer Naturforschung, B: Chemical Sciences  
(2002), 57(4), 420-426  
CODEN: ZNBSEN; ISSN: 0932-0776  
PUBLISHER: Verlag der Zeitschrift fuer Naturforschung  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
GI

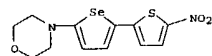


AB N,N'-Per-substituted seleno-acrylamides, easily available by reaction of  
1-chlorovinamidinium salts with sodium selenide, were transformed by  
cyclocondensation reaction of acceptor-substituted halomethyl compds.  
into  
new 2-aminoselenophene deriva., e.g. I. Their UV/vis data are presented,  
and the pos. solvatochromism of 2-amino-5-acceptor-substituted  
selenophenes is reported.  
IT 263265-45-8P 263265-47-0P 473287-32-0P  
473287-33-1P 473287-34-2P  
RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(preparation and characterization of several new N-disubstituted  
2-aminoselenophene deriva. via cyclocondensation of selenoacrylamides  
with halomethyl compds.)  
RN 263265-45-8 CAPLUS  
CN 2-Selenophenamine, N,N-dimethyl-5-(5-nitro-2-thienyl)- (9CI) (CA INDEX  
NAME)

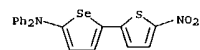


RN 263265-47-0 CAPLUS  
CN Morpholine, 4-[5-(5-nitro-2-thienyl)selenophene-2-yl]- (9CI) (CA INDEX  
NAME)

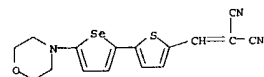
L4 ANSWER 6 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



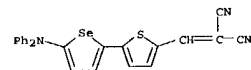
RN 473287-32-0 CAPLUS  
CN 2-Selenophenamine, 5-(5-nitro-2-thienyl)-N,N-diphenyl- (9CI) (CA INDEX  
NAME)



RN 473287-33-1 CAPLUS  
CN Propanedinitrile, [[5-[5-(4-morpholinyl)selenophene-2-yl]-2-  
thienyl)methylene]- (9CI) (CA INDEX NAME)

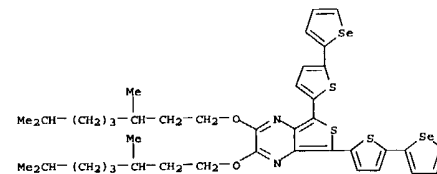


RN 473287-34-2 CAPLUS  
CN Propanedinitrile, [[5-[5-(diphenylamino)selenophene-2-yl]-2-  
thienyl)methylene]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR  
THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
FORMAT

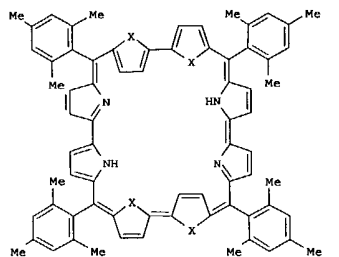
L4 ANSWER 7 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
ACCESSION NUMBER: 2002:12559 CAPLUS  
DOCUMENT NUMBER: 136:238664  
TITLE: Structure/property relations in the linear and third  
order nonlinear optical properties of substituted  
oligothiophenes  
AUTHOR(S): Van Keuren, Edward; Andreas, Reinhard; Mohwald,  
Helmut; Schrof, Wolfgang; Wakebe, Takanori; Belov,  
Vladimir; Matsuda, Hiro; Rangel-Rojó, Raul  
CORPORATE SOURCE: Department of Physics, Georgetown University,  
Washington, DC, USA  
SOURCE: MCLC S&T, Section B: Nonlinear Optics (2001),  
28(1-2),  
61-76  
CODEN: MCLOEB; ISSN: 1058-7268  
PUBLISHER: Gordon & Breach Science Publishers  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
AB In studies of optical properties of polymers, a better understanding of  
structure/property relations can be achieved through the study of the  
corresponding oligomer systems. Using the Stille coupling reaction, a  
number  
of novel oligothiophene deriva. were synthesized with systematic  
variation  
in the number of repeat units, the position and number of substituents  
and in  
one case, substitution of Se for S in some of the heteroatoms. The  
linear  
and nonlinear optical characteristics of these oligomers in solution were  
measured at both resonant and nonresonant wavelengths, and some simple  
structure/property relations could be determined. While the number and  
type of  
substituent groups as well as the main chain length had large effects on  
the optical properties, the figure of merit relevant to optical switching  
applications was little changed.  
IT 402962-00-9  
RL: PRP (Properties)  
(Structure/property relations in linear and third order nonlinear  
optical properties of substituted oligothiophenes)  
RN 402962-00-9 CAPLUS  
CN Thieno[3,4-b]pyrazine, 2,3-bis[(3,7-dimethyloctyl)oxyl]-5,7-bis(5-  
selenophene-2-yl)-2-thienyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR  
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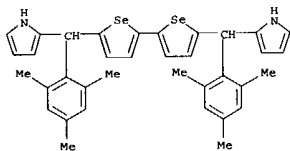
L4 ANSWER 7 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L4 ANSWER 8 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 2001:574750 CAPLUS  
 DOCUMENT NUMBER: 135:288618  
 TITLE: 34 $\pi$  Octaphyrin: First Structural Characterization of a Planar, Aromatic [1.0.1.0.1.0.1.0] Octaphyrin with Inverted Heterocyclic Rings  
 AUTHOR(S): Anand, Venkataramanarao G.; Pushpan, Simi K.; Venkatraman, Sundararaman; Dey, Abhishek; Chandrashekar, Tavarakere K.; Joshi, Bhavani S.; Roy, Raja; Teng, Weijie; Senge, Karin Ruhlandt  
 CORPORATE SOURCE: Department of Chemistry, Indian Institute of Technology, Kanpur, 208016, India  
 SOURCE: Journal of the American Chemical Society (2001), 123(35), 8620-8621  
 CODEN: JACSAT; ISSN: 0002-7863  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



AB The authors have successfully synthesized and characterized 34 $\pi$  planar, aromatic octaphyrins with inverted heterocyclic rings by a simple methodol.  
 using a single precursor, and the spectroscopic and structural data clearly suggest that the octaphyrins I (X = S) and I (X = Se) are aromatic  
 The relative energies for the inverted and noninverted structures were determined by ab initio and semiempirical methods and the results show that the inverted structure is more stable by 18.14 kcal/mol relative to the noninverted structure.  
 IT 365279-93-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (structural characterization of a planar, 34 $\pi$ -aromatic

L4 ANSWER 8 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 [1.0.1.0.1.0.1.0] octaphyrin with inverted heterocyclic rings  
 RN 365279-93-2 CAPLUS  
 CN 1H-Pyrrole, 2,2'-[(2,2'-biselenophene)-5,5'-diylbis[(2,4,6-trimethylphenyl)methylene]bis- (9CI) (CA INDEX NAME)

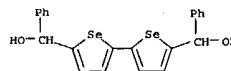


REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR  
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 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
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L4 ANSWER 9 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 2001:327068 CAPLUS  
 DOCUMENT NUMBER: 135:92460  
 TITLE: N-Confused Expanded Porphyrin: First Example of a Modified Sapphyrin with an Inverted N-Confused  
 Pyrrole  
 Ring  
 AUTHOR(S): Pushpan, Simi K.; Srinivasan, Alagar; Anand, Venkataramanarao G.; Venkatraman, Sundararaman; Chandrashekar, Tavarakere K.; Joshi, Bhavani S.; Roy, Raja; Furuta, Hiroyuki  
 CORPORATE SOURCE: Department of Chemistry, Indian Institute of Technology, Kanpur, 208-016, India  
 SOURCE: Journal of the American Chemical Society (2001), 123(21), 5138-5139  
 CODEN: JACSAT; ISSN: 0002-7863  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 135:92460  
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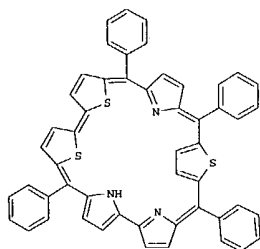
\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The authors have successfully synthesized the first N-confused modified sapphyrins, e.g. I, and have shown that these mols. are stable and aromatic  
 and display an inverted structure in both freebase and protonated forms.  
 Thus, condensation of tripyrrane II with bithiophene III in the presence of 0.15 equivalent of p-TsOH followed by chloranil oxidation gave I, instead of the expected non-inverted N-confused sapphyrin IV, in 24% yield.  
 IT 238079-40-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (first example of a N-confused expanded porphyrin (modified sapphyrin) with an inverted N-confused pyrrole ring)  
 RN 238079-40-8 CAPLUS  
 CN [2,2'-biselenophene]-5,5'-dimethanol,  $\alpha,\alpha'$ -diphenyl- (9CI)  
 (CA INDEX NAME)



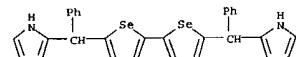
REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR  
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 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
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L4 ANSWER 10 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 2001:292813 CAPLUS  
 DOCUMENT NUMBER: 135:92458  
 TITLE: Characterization of a new meso-aryl rubyrin isomer: [26]hexaphyrin (1.1.1.0.1.0) with an inverted heterocyclic ring  
 AUTHOR(S): Pushpan, S. K.; Anand, V. R. G.; Venkatraman, S.; Srinivasan, A.; Gupta, A. K.; Chandrashekar, T. K.  
 CORPORATE SOURCE: Department of Chemistry, Indian Institute of Technology, Kanpur, 208 016, India  
 SOURCE: Tetrahedron Letters (2001), 42(19), 3391-3394  
 CODEN: TELEAY; ISSN: 0040-4039  
 PUBLISHER: Elsevier Science Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 135:92458  
 GI



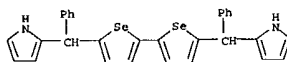
AB The synthesis and characterization of new aromatic 26 $\pi$  macrocycles, e.g. 1, obtained from the acid catalyzed 4+3 coupling reaction of core modified tripyrrane and tetrapyrane are described.  
 IT 314725-87-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (characterization of a new meso-aryl rubyrin isomer with an inverted heterocyclic ring)  
 RN 314725-87-6 CAPLUS  
 CN 1H-Pyrrole, 2,2'-[2,2'-biselenophene]-5,5'-diylbis(phenylmethylene))bis- (9CI) (CA INDEX NAME)

L4 ANSWER 11 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 2000:769988 CAPLUS  
 DOCUMENT NUMBER: 134:71421  
 TITLE: Meso Aryl Heptaphyrins: The First 30 $\pi$  Aromatic Expanded Porphyrins with an Inverted Structure  
 AUTHOR(S): Anand, Venkataramana Rao. G.; Pushpan, Simi K.; Srinivasan, Alagar; Narayanan, Seenichamy  
 Jeyaprakash;  
 Sridevi, Bashyam; Chandrashekar, Tavarekere K.; Roy, Raja; Joshi, Bhavani S.  
 CORPORATE SOURCE: Department of Chemistry, Indian Institute of Technology, Kanpur, 208 016, India  
 SOURCE: Organic Letters (2000), 2(24), 3829-3832  
 CODEN: ORLEP7; ISSN: 1523-7060  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 134:71421  
 AB Synthesis of new meso aryl 30 $\pi$  heptaphyrins is achieved. Spectroscopic studies reveal that these heptaphyrins are aromatic and possess an inverted structure.  
 IT 314725-87-6  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (synthesis, NMR and UV-VIS spectra of 30 $\pi$  aromatic heptaphyrins)  
 RN 314725-87-6 CAPLUS  
 CN 1H-Pyrrole, 2,2'-[2,2'-biselenophene]-5,5'-diylbis(phenylmethylene))bis- (9CI) (CA INDEX NAME)

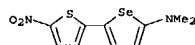


REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS  
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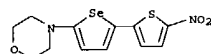
L4 ANSWER 10 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
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L4 ANSWER 12 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 2000:132412 CAPLUS  
 DOCUMENT NUMBER: 132:266438  
 TITLE: New solvatochromic dyes of the 5-dimethylamino-5'-nitro-2,2'-bithiophene type  
 AUTHOR(S): Hartmann, Horst; Eckert, Katrin; Schroder, Anke  
 CORPORATE SOURCE: Fachbereich Chemie der Fachhochschule Merseburg, Merseburg, 02617, Germany  
 SOURCE: Angewandte Chemie, International Edition (2000), 39(3), 556-558  
 CODEN: ACHIEF5; ISSN: 1433-7851  
 PUBLISHER: Wiley-VCH Verlag GmbH  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB In the preparation of 17 of the title dyes, a halomethylnitrobenzene or thiophene is cyclocondensed with an unsatd. compound such as 1,3-bis(dimethylamino)propene-3-thione or -selenone with formation of iminium intermediates.  
 IT 263265-45-8P 263265-47-0P  
 RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (dye; preparation of thiophene-based solvatochromic dyes)  
 RN 263265-45-8 CAPLUS  
 CN 2 Selenophenamine, N,N-dimethyl-5-(5-nitro-2-thienyl)- (9CI) (CA INDEX NAME)

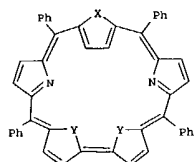


RN 263265-47-0 CAPLUS  
 CN Morpholine, 4-[5-(5-nitro-2-thienyl)selenophene-2-yl]- (9CI) (CA INDEX NAME)



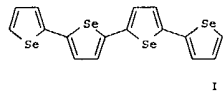
REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
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L4 ANSWER 13 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1999:680930 CAPLUS  
 DOCUMENT NUMBER: 132:35541  
 TITLE: Structural Characterization of Meso Aryl Sapphyrins  
 AUTHOR(S): Srinivasan, Alagar; Anand, V. G.; Narayanan, S.; Jeyaprasath; Pushpan, Simi K.; Kumar, M. Ravi; Chandrashekar, Tavarakere K.; Sugiura, Ken-ichi; Sakata, Yoshitetsu  
 CORPORATE SOURCE: Department of Chemistry, Indian Institute of Technology, Kanpur, 208 016, India  
 SOURCE: Journal of Organic Chemistry (1999), 64(23), 8693-8697  
 CODEN: JOCEAH; ISSN: 0022-3263  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 132:35541  
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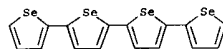


AB The authors report the synthesis of meso aryl sapphyrins (I) (X = NH, NMe, O, S, Se; Y = Se) and solved the first single-crystal X-ray structures of two inverted sapphyrins I (X = se, Y = S) (II) and I (X = NMe, Y = Se) (III) and report comparative X-ray structural data as well as spectroscopic data. Data anal. reveal that larger core sizes and the presence of small heteroatoms (N or O) adjacent to the heterocyclic ring lead to inverted structures, while the presence of bigger heteroatoms (S or Se) leads to planar structures. NMR data indicates that the inverted structures show reduced diatropic ring currents.  
 IT 6239-48-1P, 2,2'-Biselenophene 238079-40-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (synthesis and conformations of meso aryl sapphyrins)  
 RN 6239-48-1 CAPLUS  
 CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)

L4 ANSWER 14 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1999:459472 CAPLUS  
 DOCUMENT NUMBER: 131:137034  
 TITLE: Molecular and crystal structures of 2,2':5',2'':5'',2'''-quaterseleophene  
 AUTHOR(S): Nakanishi, H.; Inoue, S.; Aso, Y.; Otsubo, T.  
 CORPORATE SOURCE: Faculty of Engineering, Hiroshima University, Higashi-Hiroshima, 739-8527, Japan  
 SOURCE: Synthetic Metals (1999), 101(1-3), 639  
 CODEN: SYMDEZ; ISSN: 0379-6779  
 PUBLISHER: Elsevier Science S.A.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
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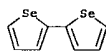


AB The quaterseleophene (I) assumes a stretched S-trans planar type of mol. structure and a herringbone stacking type of crystal structure. There are some Se...Se intermol. contacts along the b- and c-crystal axes.  
 IT 188905-11-5, 2,2':5',2'':5'',2'''-Quaterseleophene  
 RL: PRP (Properties)  
 (mol. and crystal structure of quaterseleophene)  
 RN 188905-11-5 CAPLUS  
 CN 2,2':5',2'':5'',2'''-Quaterseleophene (9CI) (CA INDEX NAME)

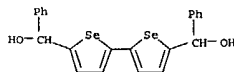


REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
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L4 ANSWER 13 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

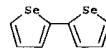


RN 238079-40-8 CAPLUS  
 CN [2,2'-Biselenophene]-5,5'-dimethanol, α,α'-diphenyl- (9CI)  
 (CA INDEX NAME)

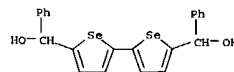


REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
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L4 ANSWER 15 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1999:348801 CAPLUS  
 DOCUMENT NUMBER: 131:170200  
 TITLE: Novel heteroatom containing rubyrins  
 AUTHOR(S): Srinivasan, Alagar; Pushpan, Simi K.; Ravikumar, Murugaeson; Chandrashekar, Tavarakere K.; Roy, Raja  
 CORPORATE SOURCE: Department of Chemistry, Indian Institute of Technology, Kanpur, 208 016, India  
 SOURCE: Tetrahedron (1999), 55(21), 6671-6680  
 CODEN: TETRAH; ISSN: 0040-4020  
 PUBLISHER: Elsevier Science Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Synthesis of rubyrins containing two or three heteroatoms (O, S, Se) in the core is accomplished using modified diols and tetrapyrromethanes. Substitution of heteroatoms leads to significant redns. in HOMO-LUMO gap and easier oxidns. and redns. reflecting the changes in electronic structure of the rubyrin skeleton.  
 IT 6239-48-1P, 2,2'-Biselenophene 238079-40-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (synthesis, spectral and electrochem. properties of heteroatom containing rubyrins)  
 RN 6239-48-1 CAPLUS  
 CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 238079-40-8 CAPLUS  
 CN [2,2'-Biselenophene]-5,5'-dimethanol, α,α'-diphenyl- (9CI)  
 (CA INDEX NAME)



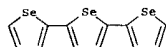
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE  
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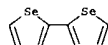
L4 ANSWER 16 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1999:193947 CAPLUS  
 DOCUMENT NUMBER: 130:238030  
 TITLE: Preparation and use of polyselenophenes  
 INVENTOR(S): Mohwald, Helmut; Belov, Vladimir; Schrof, Wolfgang  
 PATENT ASSIGNEE(S): BASF Aktiengesellschaft, Germany  
 SOURCE: Eur. Pat. Appl., 23 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 902043	A2	19990317	EP 1998-116886	19980907
EP 902043	A3	19990811		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 11152323	A2	19990608	JP 1998-255795	19980909
US 6197922	B1	20010306	US 1998-149446	19980909
DE 1997-19739775 A 19970910				

PRIORITY APPLN. INFO.: MARPAT 130:238030  
 OTHER SOURCE(S):  
 AB Polyselenophenes with good elec. conductivity and broad applicability, containing repeating units of specified structure, are prepared The Stille reaction of 2-iodoselenophene with 2-(trimethylsilyl)selenophene gave 69% 2,2'-biselenophene.  
 IT 67308-30-9P, 2,2':5',2''-Terselenophene  
 RL: IMP (Industrial manufacture); PRP (Properties); PREP (Preparation) (preparation and reaction with butyllithium and trimethyltin chloride)  
 RN 67308-30-9 CAPLUS  
 CN 2,2':5',2''-Terselenophene (9CI) (CA INDEX NAME)



IT 6239-48-1P, 2,2'-Biselenophene 220770-49-0P  
 220770-51-4P  
 RL: IMP (Industrial manufacture); PRP (Properties); PREP (Preparation) (preparation of)  
 RN 6239-48-1 CAPLUS  
 CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 220770-49-0 CAPLUS  
 CN Stannane, [2,2':5',2''-terselenophene]-5,5'-diylbis(trimethyl- (9CI) (CA INDEX NAME)

L4 ANSWER 17 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1999:184327 CAPLUS  
 DOCUMENT NUMBER: 130:202690  
 TITLE: Polyselenophenes as materials with nonlinear optical properties  
 INVENTOR(S): Schrof, Wolfgang; Belov, Vladimir; Moehwald, Helmut; Rozouvan, Stanislav; Van Keuren, Edward  
 PATENT ASSIGNEE(S): BASF A.-G., Germany  
 SOURCE: Ger. Offen., 18 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19739774	A1	19990311	DE 1997-19739774	19970910
JP 11160745	A2	19990618	JP 1998-256411	19980910
DE 1997-19739774 19970910				

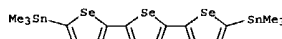
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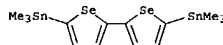
AB Nonlinear optical materials are described which comprise 21 polyselenophenes having repeating units described by the general formulas I and II (X, Y are not both H, and are independently selected from H, NO<sub>2</sub>, -NHR, and (un)branched C1-22 alkyl, alkoxy, alkyloxyalkyl, acyl, thioacyl, thioalkoxy, or acyloxy groups, C5-8 cycloalkyl or heterocyclic groups, and C6-18 aryl groups which may be substituted with 21 (un)branched C1-22 alkyl, alkoxy, alkyloxyalkyl, acyl, and/or thioacyl groups, or X and Y, together with the atoms to which they are bound, may form a C-containing ring system which addnl. contains 21 of P, N, O, and/or S, with substituents selected from the same materials as X and Y being optionally attached to the C, N, or P atoms, the substituents on adjacent atoms being capable of forming further ring systems; R = H, (un)branched C1-22 alkyl, alkoxy, alkyloxyalkyl, acyl, and/or thioacyl groups). The selenophenes may be formed by reaction of a 2,5-bis(trialkyltin)selenophene with halo- or triflate-substituted selenophenes. The nonlinear optical materials may addnl. contain other polymers.  
 IT 67308-30-9P, 2,2':5',2''-Terselenophene 220770-51-4P  
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (polyselenophene-based nonlinear optical materials)  
 RN 67308-30-9 CAPLUS  
 CN 2,2':5',2''-Terselenophene (9CI) (CA INDEX NAME)

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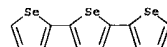
L4 ANSWER 16 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 INDEX NAME)



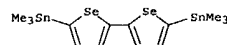
RN 220770-51-4 CAPLUS  
 CN Stannane, [2,2':5',2''-terselenophene]-5,5'-diylbis(trimethyl- (9CI) (CA INDEX NAME)



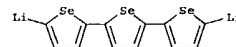
L4 ANSWER 17 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



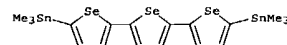
RN 220770-51-4 CAPLUS  
 CN Stannane, [2,2':5',2''-terselenophene]-5,5'-diylbis(trimethyl- (9CI) (CA INDEX NAME)



IT 220770-47-8P 220770-49-0P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (polyselenophene-based nonlinear optical materials)  
 RN 220770-47-8 CAPLUS  
 CN Lithium, μ-[2,2':5',2''-terselenophene]-5,5'-diyl- (9CI) (CA INDEX NAME)

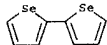


RN 220770-49-0 CAPLUS  
 CN Stannane, [2,2':5',2''-terselenophene]-5,5'-diylbis(trimethyl- (9CI) (CA INDEX NAME)



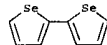
06/17/2004

L4 ANSWER 18 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1998:502394 CAPLUS  
 DOCUMENT NUMBER: 130:52516  
 TITLE: The Photoelectron Spectrum of 2,2'-Bitellurophene  
 AUTHOR(S): Novak, Igor; Ng, Siu Choon; Wang, Li; Huang, Wei  
 CORPORATE SOURCE: Department of Chemistry, National University of Singapore, Singapore, 119260, Singapore  
 SOURCE: Journal of Chemical Research, Synopses (1998), (8), 438-439  
 CODEN: JRPSDC; ISSN: 0308-2342  
 PUBLISHER: Royal Society of Chemistry  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB He I and He II photoelectron spectra of 2,2'-bitellurophene were recorded and analyzed from empirical arguments.  
 IT 6239-48-1, 2,2'-Biselenophene  
 RL: PRP (Properties)  
 (photoelectron spectra of)  
 RN 6239-48-1 CAPLUS  
 CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)

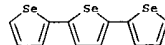


REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
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L4 ANSWER 19 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1998:483982 CAPLUS  
 DOCUMENT NUMBER: 129:316306  
 TITLE: Theoretical investigation of the structure and conformational behavior of small selenophene  
 oligomers  
 AUTHOR(S): Millefiori, Salvatore; Alparone, Andrea  
 CORPORATE SOURCE: Dip. Scienze Chimiche, Univ. Catania, Catania, 95125, Italy  
 SOURCE: Synthetic Metals (1998), 95(3), 217-224  
 CODEN: SYMEDZ; ISSN: 0379-6779  
 PUBLISHER: Elsevier Science S.A.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB The mol. structure and the conformational behavior of selenophene, 2,2'-biselenophene ( $\alpha$ -2Se), 2,2':5',2''-terselephene ( $\alpha$ -3Se) and 2,2':5',2''':5'',2''':5''',2''''-quaterselephene ( $\alpha$ -4Se) were determined through conventional ab initio and d. functional calcns. using a polarized valence double zeta basis set. Hartree-Fock (HF) calcns. predict very flat 4-fold torsional potentials where the min. energy conformations correspond to anti-gauche structures and the less stable conformations to the syn form. The planar and perpendicular conformations are transition states. Zero point vibrational energy corrections have negligible effects. B3LYP calcns. favor  $\pi$ -electron interactions suggesting that the planar anti form is the ground state of  $\alpha$ -oligoselenophenes. Torsional potentials were analyzed by a Fourier procedure in terms of nonbonding and conjugative interactions and were compared with corresponding data in S analogs.  
 IT 6239-48-1, 2,2'-Biselenophene 67308-30-9,  
 2,2':5',2''-Terselephene 188905-11-5, 2,2':5',2''':5'',2''''-Quaterselephene  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)  
 (theor. investigation of structure and conformational behavior of small selenophene oligomers)  
 RN 6239-48-1 CAPLUS  
 CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)



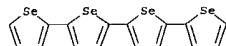
RN 67308-30-9 CAPLUS  
 CN 2,2':5',2''-Terselephene (9CI) (CA INDEX NAME)



RN 188905-11-5 CAPLUS

own work

L4 ANSWER 19 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 CN 2,2':5',2''':5'',2''''-Quaterselephene (9CI) (CA INDEX NAME)



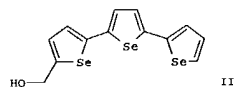
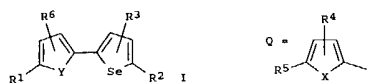
REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE  
 FORMAT

L4 ANSWER 20 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1997:812176 CAPLUS  
 DOCUMENT NUMBER: 128:75301  
 TITLE: Selenophene anti-tumor agents  
 INVENTOR(S): Chang, Ching-Jer; Ashendel, Curtis L.; Kim, Darrick  
 PATENT ASSIGNEE(S): Purdue Research Foundation, USA; Chang, Ching-Jer; Ashendel, Curtis L.; Kim, Darrick  
 SOURCE: PCT Int. Appl., 101 pp.  
 CODEN: PIXKX2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9746225	A1	19971211	WO 1997-US9717	19970603
W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, AM, AZ, BY, BG, KZ, MD, RU, TJ, TM			
RW:	GH, KE, LS, MW, SD, SZ, UG, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG			
AU 9733007	A1	19980105	AU 1997-33007	19970603
AU 727123	B2	20001130		
EP 1021178	A1	20000726	EP 1997-928846	19970603
EP 1021178	B1	20030827		
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI			
JP 2001503381	T2	20010313	JP 1997-538390	19970603
US 247955	E	20030915	AT 1997-928846	19970603
US 2003028015	A1	20030206	US 2002-61480	20020201
US 6620804	B2	20030916		
US 2004063662	A1	20040401	US 2003-658175	20030909
PRIORITY APPL. INFO.:			US 1996-19095P	P 19960603
			WO 1997-US9717	W 19970603
			US 1998-180514	A1 19981111
			US 2002-61480	A3 20020201

OTHER SOURCE(S): MARPAT 128:75301  
 01

L4 ANSWER 20 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



AB Novel selenophene compds. useful as anti-tumor agents are described. Preferred compds. include terselenophenes and analogs, specifically I

one of R1 and R2 = 5-membered ring Q; other = H, CH2OH, CHO, CH2NH2; X, Y = Se, S, O, NMe, NH; R3, R4, R6 = H, CHO, CH2OH, CH2NH2; R5 = H, CH2OH, CH2NH2 and their pharmaceutically acceptable salts and cyclodextrin complexes. Pharmaceutical compds. and a method for treating patients having tumors, utilizing the disclosed selenophene compds., are also described. For instance, double acylation of selenophene by succinyl chloride (25%) and selenation/cyclocondensation of the formed diketone with bis(tricyclohexyltin) selenide (80%) gave

2,2',5',2''-terselenophene, which was lithiated and formylated with DMF (75%) and reduced with NaBH4 (98%) to give title compound II. In tests for cytotoxicity toward human renal cells, II showed a selectivity of > 1000 against A-498 human renal carcinoma cells vs. normal cells in vitro.

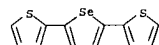
IT 51678-15-0P, 2,2':5,2''-Dithienylselenophene 67308-30-9P, 2,2':5,2''-Terselenophene 130236-58-7P, 2,2':5,2''-Diselenophenylthiophene 200508-93-6P, 2,2':5,2''-Diselenophenylpyrrole 200508-94-7P, 5'-Formyl-2,2':5,2''-diselenophenylpyrrole

RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

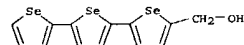
(preparation of terselenophenes and analogs as antitumor agents)

RN 51678-15-0 CAPLUS

CN Thiophene, 2,2'-(2,5-selenophenediyl)bis- (9CI) (CA INDEX NAME)

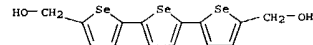


L4 ANSWER 20 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



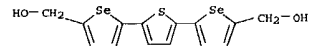
RN 200508-83-4 CAPLUS

CN [2,2':5,2''-Terselenophene]-5,5'-dimethanol (9CI) (CA INDEX NAME)



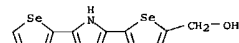
RN 200508-92-5 CAPLUS

CN 2-Selenophenemethanol, 5,5'-(2,5-thiophenediyl)bis- (9CI) (CA INDEX NAME)



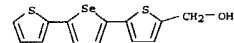
RN 200508-95-8 CAPLUS

CN 2-Selenophenemethanol, 5-(5-selenophene-2-yl-1H-pyrrol-2-yl)- (9CI) (CA INDEX NAME)



RN 200509-02-0 CAPLUS

CN 2-Thiophenemethanol, 5-[5-(2-thienyl)selenophene-2-yl]- (9CI) (CA INDEX NAME)



IT 130236-57-6P, 2,2':5,2''-Difuranylselenophene 130236-59-8P

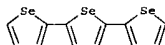
, 2,2':5,2''-Diselenophenylfuran 200508-80-1P, 2-Formyl-5,2':5,2''-terselenophene 200508-82-2P, 2,5''-Di-formyl-5,2':5,2''-terselenophene 200508-85-6P, 5'-Formyl-2,2':5,2''-diselenophenylfuran 200508-86-7P, 5',5''-Di-formyl-2,2':5,2''-diselenophenylfuran 200508-89-0P, 5'-Formyl-2,2':5,2''-diselenophenylthiophene 200508-90-3P, 5',5''-Di-formyl-2,2':5,2''-diselenophenylthiophene 200508-96-9P, 5'-Formyl-2,2':5,2''-difuranylselenophene 200508-97-0P, 5',5''-Di-formyl-2,2':5,2''-difuranylselenophene 200509-00-8P, 5'-Formyl-2,2':5,2''-dithienylselenophene 200509-02-9P, 5',5''-Di-formyl-2,2':5,2''-dithienylselenophene 200509-04-3P, 2-(2''-Selenyl)-5-(2''-thienyl)thiophene 200509-12-2P,

Hahte

L4 ANSWER 20 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

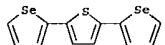
RN 67308-30-9 CAPLUS

CN 2,2':5,2''-Terselenophene (9CI) (CA INDEX NAME)



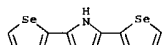
RN 130236-58-7 CAPLUS

CN Thiophene, 2,5-diselenophene-2-yl- (9CI) (CA INDEX NAME)



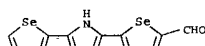
RN 200508-93-6 CAPLUS

CN 1H-Pyrrole, 2,5-diselenophene-2-yl- (9CI) (CA INDEX NAME)



RN 200508-94-7 CAPLUS

CN 2-Selenophenecarboxaldehyde, 5-(5-selenophene-2-yl-1H-pyrrol-2-yl)- (9CI) (CA INDEX NAME)



IT 200508-82-3P, 2-(Hydroxymethyl)-5,2':5,2''-terselenophene

200508-83-4P, 2,5''-Bis(hydroxymethyl)-5,2':5,2''-terselenophene

200508-92-5P, 5',5''-Bis(hydroxymethyl)-2,2':5,2''-diselenophenylthiophene

200508-95-8P, 5'-Hydroxymethyl-2,2':5,2''-diselenophenylpyrrole

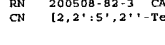
200509-02-0P, 5'-Hydroxymethyl-2,2':5,2''-dithienylselenophene

RL: ADV (Adverse effect, including toxicity); BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of terselenophenes and analogs as antitumor agents)

RN 200508-82-3 CAPLUS

CN [2,2':5,2''-Terselenophene]-5-methanol (9CI) (CA INDEX NAME)



L4 ANSWER 20 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

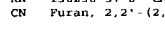
5',5''-Di-formyl-2-(2''-selenyl)-5-(2''-thienyl)thiophene

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

(prepn. of terselenophenes and analogs as antitumor agents)

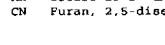
RN 130236-57-6 CAPLUS

CN Furan, 2,2'-(2,5-selenophenediyl)bis- (9CI) (CA INDEX NAME)



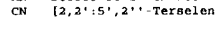
RN 130236-59-8 CAPLUS

CN Furan, 2,5-diselenophene-2-yl- (9CI) (CA INDEX NAME)



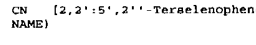
RN 200508-80-1 CAPLUS

CN [2,2':5,2''-Terselenophene]-5-carboxaldehyde (9CI) (CA INDEX NAME)



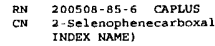
RN 200508-81-2 CAPLUS

CN [2,2':5,2''-Terselenophene]-5,5''-dicarboxaldehyde (9CI) (CA INDEX NAME)



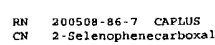
RN 200508-85-6 CAPLUS

CN 2-Selenophenecarboxaldehyde, 5,5'-(2,5-furandiyl)bis- (9CI) (CA INDEX NAME)



RN 200508-86-7 CAPLUS

CN 2-Selenophenecarboxaldehyde, 5,5'-(2,5-furandiyl)bis- (9CI) (CA INDEX NAME)



RN 200508-86-7 CAPLUS

CN 2-Selenophenecarboxaldehyde, 5,5'-(2,5-furandiyl)bis- (9CI) (CA INDEX NAME)

06/17/2004

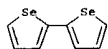


L4 ANSWER 20 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

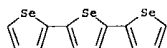
AB Oligoselenophenes with well-defined structures up to the hexamer were synthesized using the Stille coupling reactions, and their phys. properties were studied by electronic absorption and emission spectroscopy as well as cyclic voltammetry. Their spectra systematically change with increasing conjugated chain lengths, and the correlations are reminiscent of those for oligothiophene series, suggesting that conjugation forms of both  $\pi$ -electronic systems are very similar. The oligoselenophenes, on 1 doping, have relatively high conductivities comparable to those of the oligothiophene counterparts, which increase up to approx.  $10^{-2}$  Scm $^{-1}$  with an increasing number of the selenophene units.

IT 6239-48-1P, 2,2'-Biselenophene 67308-30-9P, 2,2':5',2''-Terselenophene 116886-64-7P, 5,5'-Dibromo-2,2'-Biselenophene 116886-65-8P 200284-71-5P, [2,2'-Biselenophene]-5-carboxaldehyde 200284-73-7P 200284-76-0P 200284-78-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and properties of oligoselenophenes)

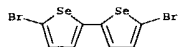
RN 6239-48-1 CAPLUS  
 CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 67308-30-9 CAPLUS  
 CN 2,2':5',2''-Terselenophene (9CI) (CA INDEX NAME)

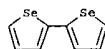


RN 116886-64-7 CAPLUS  
 CN 2,2'-Biselenophene, 5,5'-dibromo- (9CI) (CA INDEX NAME)

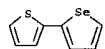


Habte

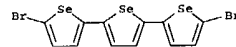
L4 ANSWER 21 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1997:805927 CAPLUS  
 DOCUMENT NUMBER: 128:3439  
 TITLE: Entropy characteristics of some oxygen-, sulfur-, and selenium- containing cyclic organic compounds  
 adsorbed on graphitized carbon black  
 AUTHOR(S): Lopatkin, A. A.; Dallakyan, P. B.  
 CORPORATE SOURCE: Khim. Fak., MGU, Moscow, Russia  
 SOURCE: Zhurnal Fizicheskoi Khimii (1997), 71(7), 1333-1335  
 CODEN: ZFKHA9; ISSN: 0044-4537  
 PUBLISHER: MAIK Nauka  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 AB Equilibrium consts. were measured for 35 title compds. on graphitized carbon black by gas chromatog. In almost all cases these data followed the mol. model of an ideal 2-dimensional gas, the deviation not exceeding 6-8%. Greater deviations were attributed to steric considerations.  
 IT 6239-48-1, 2,2'-Biselenophene 119507-82-3, Thiophene, 2-(selenophene-2-yl)-  
 RL: PRP (Properties)  
 (entropy characteristics of oxygen-, sulfur-, and selenium- containing cyclic organic compds. adsorbed on graphitized carbon black)  
 RN 6239-48-1 CAPLUS  
 CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)



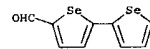
RN 119507-82-3 CAPLUS  
 CN Thiophene, 2-(selenophene-2-yl)- (9CI) (CA INDEX NAME)



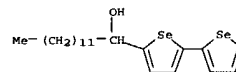
L4 ANSWER 22 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 RN 116886-65-8 CAPLUS  
 CN 2,2':5',2''-Terselenophene, 5,5'-dibromo- (9CI) (CA INDEX NAME)



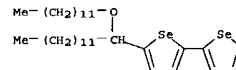
RN 200284-71-5 CAPLUS  
 CN [2,2'-Biselenophene]-5-carboxaldehyde (9CI) (CA INDEX NAME)



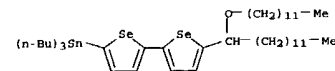
RN 200284-73-7 CAPLUS  
 CN [2,2'-Biselenophene]-5-methanol,  $\alpha$ -dodecyl- (9CI) (CA INDEX NAME)



RN 200284-76-0 CAPLUS  
 CN 2,2'-Biselenophene, 5-[1-(dodecyloxy)tridecyl]- (9CI) (CA INDEX NAME)



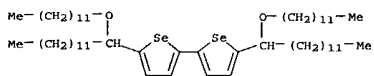
RN 200284-78-2 CAPLUS  
 CN Stannane, tributyl[5'-[1-(dodecyloxy)tridecyl][2,2'-biselenophen]-5-yl]- (9CI) (CA INDEX NAME)



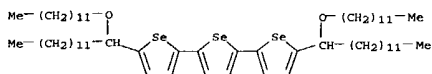
IT 188905-08-0P 188905-10-4P 188905-11-5P, 2,2':5',2''-Terselenophene 188905-13-7P 188905-14-8P 188905-16-0P 188905-17-1P 200284-50-0P 200284-52-2P 200284-54-4P 200284-56-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)

06/17/2004

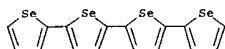
L4 ANSWER 22 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
(prepn. of)  
RN 188905-08-0 CAPLUS  
CN 2,2'-Biselenophene, 5,5'-bis[1-(dodecyloxy)tridecyl]- (9CI) (CA INDEX NAME)



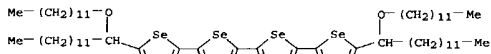
RN 188905-10-4 CAPLUS  
CN 2,2':5',2'':5'':2''':5'''-Terselenophene, 5,5'''-bis[1-(dodecyloxy)tridecyl]- (9CI) (CA INDEX NAME)



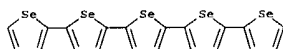
RN 188905-11-5 CAPLUS  
CN 2,2':5',2'':5'':2''':5'''-Quaterselenophene (9CI) (CA INDEX NAME)



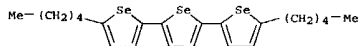
RN 188905-13-7 CAPLUS  
CN 2,2':5',2'':5'':2''':5'''-Quaterselenophene, 5,5'''-bis[1-(dodecyloxy)tridecyl]- (9CI) (CA INDEX NAME)



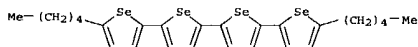
RN 188905-14-8 CAPLUS  
CN 2,2':5',2'':5'':2''':5'''-Quineselenophene (9CI) (CA INDEX NAME)



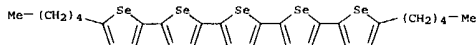
L4 ANSWER 22 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
CN 2,2':5',2'':5'':2''':5'''-Terselenophene, 5,5'-dipentyl- (9CI) (CA INDEX NAME)



RN 200284-54-4 CAPLUS  
CN 2,2':5',2'':5'':2''':5'''-Quaterselenophene, 5,5'''-dipentyl- (9CI) (CA INDEX NAME)



RN 200284-56-6 CAPLUS  
CN 2,2':5',2'':5'':2''':5'''-Quineselenophene, 5,5'''-dipentyl- (9CI) (CA INDEX NAME)

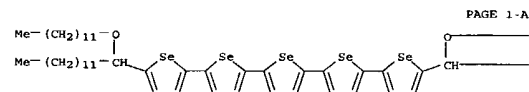


REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS

FORMAT RECORD. ALL CITATIONS AVAILABLE IN THE RE

L4 ANSWER 22 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

RN 188905-16-0 CAPLUS  
CN 2,2':5',2'':5'':2''':5'''-Quineselenophene, 5,5'''-bis[1-(dodecyloxy)tridecyl]- (9CI) (CA INDEX NAME)

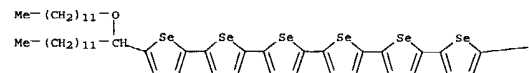


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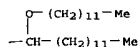
PAGE 1-B

RN 188905-17-1 CAPLUS  
CN 2,2':5',2'':5'':2''':5'''-Sexiselenophene, 5,5'''-bis[1-(dodecyloxy)tridecyl]- (9CI) (CA INDEX NAME)

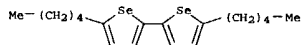
PAGE 1-A



PAGE 1-B



RN 200284-50-0 CAPLUS  
CN 2,2'-Biselenophene, 5,5'-dipentyl- (9CI) (CA INDEX NAME)



RN 200284-52-2 CAPLUS

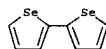
L4 ANSWER 23 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1997:217339 CAPLUS  
DOCUMENT NUMBER: 126:278109  
TITLE: Electrochemical and spectroscopic properties of oligoselenophenes  
AUTHOR(S): Inoue, S.; Nakanishi, H.; Takimiya, K.; Aso, Y.; Otaubo, T.  
CORPORATE SOURCE: Department of Applied Chemistry, Faculty of Engineering, Hiroshima University, Higashi-Hiroshima, 739, Japan  
SOURCE: Synthetic Metals (1997), 84(1-3), 341-342  
CODEN: SYMEDZ; ISSN: 0379-6779  
PUBLISHER: Elsevier  
DOCUMENT TYPE: Journal  
LANGUAGE: English

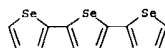
AB The cyclic voltammograms and electronic absorption spectra of a series of  $\alpha$ -oligoselenophenes were studied and systematically changed depending on the conjugated chain lengths, being reminiscent of those for the oligothiophene series. Their radical cations and dications were successively generated by stoichiometric oxidations with  $\text{FeCl}_3$  in dichloromethane and characterized by electronic spectroscopy. In addition, electrolysis of the unsubstituted oligoselenophenes gave polymeric films very similar to that obtained from selenophene itself, which was suggested

to have a limited conjugation.  
IT 6239-46-1, 2,2'-Biselenophene 67308-30-9,  
2,2':5',2'':5'':2''':5'''-Terselenophene 188905-07-9 188905-08-0  
188905-09-1 188905-10-4 188905-11-5,  
2,2':5',2'':5'':2''':5'''-Quaterselenophene 188905-12-6  
188905-13-7 188905-14-8 188905-15-9  
188905-16-0 188905-17-1  
RL: PRP (Properties)  
(electrochem. and spectroscopic properties of oligoselenophenes)

RN 6239-46-1 CAPLUS  
CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 67308-30-9 CAPLUS  
CN 2,2':5',2'':5'':2''':5'''-Terselenophene (9CI) (CA INDEX NAME)

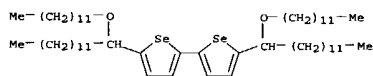


RN 188905-07-9 CAPLUS  
CN 2,2'-Biselenophene, 5,5'-dihexyl- (9CI) (CA INDEX NAME)

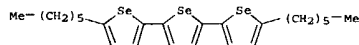


L4 ANSWER 23 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

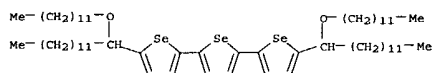
RN 188905-08-0 CAPLUS  
 CN 2,2'-Biselenophene, 5,5'-bis[1-(dodecyloxy)tridecyl]- (9CI) (CA INDEX NAME)



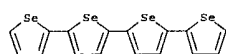
RN 188905-09-1 CAPLUS  
 CN 2,2':5',2''-Terselenophene, 5,5''-dihexyl- (9CI) (CA INDEX NAME)



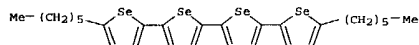
RN 188905-10-4 CAPLUS  
 CN 2,2':5',2''-Terselenophene, 5,5''-bis[1-(dodecyloxy)tridecyl]- (9CI) (CA INDEX NAME)



RN 188905-11-5 CAPLUS  
 CN 2,2':5',2''':5'',2''''-Quaterselephenene (9CI) (CA INDEX NAME)

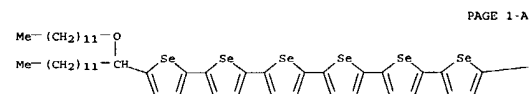


RN 188905-12-6 CAPLUS  
 CN 2,2':5',2''':5'',2''''-Quaterselephenene, 5,5''''-dihexyl- (9CI) (CA INDEX NAME)



RN 188905-13-7 CAPLUS  
 CN 2,2':5',2''':5'',2''''-Quaterselephenene, 5,5''''-bis[1-(dodecyloxy)tridecyl]-

L4 ANSWER 23 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

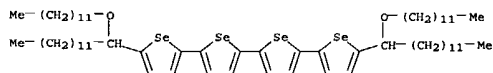


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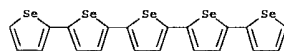


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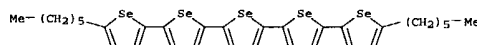
L4 ANSWER 23 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



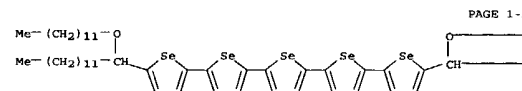
RN 188905-14-8 CAPLUS  
 CN 2,2':5',2''':5'',2''''-Quaterselephenene (9CI) (CA INDEX NAME)



RN 188905-15-9 CAPLUS  
 CN 2,2':5',2''':5'',2''''-Quaterselephenene, 5,5''''-dihexyl- (9CI) (CA INDEX NAME)



RN 188905-16-0 CAPLUS  
 CN 2,2':5',2''':5'',2''''-Quaterselephenene, 5,5''''-bis[1-(dodecyloxy)tridecyl]- (9CI) (CA INDEX NAME)



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—(CH2)11—Me

—(CH2)11—Me

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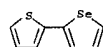
RN 188905-17-1 CAPLUS  
 CN 2,2':5',2''':5'',2''''-Quaterselephenene, 5,5''''-bis[1-(dodecyloxy)tridecyl]- (9CI) (CA INDEX NAME)

L4 ANSWER 24 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1996:715345 CAPLUS  
 DOCUMENT NUMBER: 126:32086  
 TITLE: Influence of doping anion on electrochemical and physical properties of polyselenienyl thiophene polymer  
 AUTHOR(S): Peulon, Valerie; Barbey, Gerard; Malandain, Jean-Jacques  
 CORPORATE SOURCE: Laboratoire d'Electrochimie et de Chimie Analytique, Universite de Rouen, UFR des Sciences et Techniques, 76821, Mont-Saint-Aignan, Fr.  
 SOURCE: Synthetic Metals (1996), 82(2), 111-117  
 CODEN: SYMEDZ; ISSN: 0379-6779  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB The effect of counter ions on electrochem. and phys. properties of polyselenienyl thiophene (PSeT) films was investigated. The films were prepared by anodic oxidation of selenienyl thiophene in acetonitrile using PF6-, ClO4-, BF4- and CF3SO3- as the doping anion. Electrochem. characterization of these films using the same electrolyte as that used for electrosynthesis shows that their electrochem. properties are mainly controlled by the anion. The influence of the electrolyte on the morphol. and the conductivity of PSeT films was analyzed. The anion effect can be related to the size of the counter ion. The bands specific to each doping species are distinctly observable in FTIR spectra for the doped PSeT films.  
 IT 127475-91-6, Thiophene, 2-(selenophene-2-yl)-, homopolymer  
 RL: PRP (Properties)  
 (influence of doping anion on electrochem. and phys. properties of polyselenienyl thiophene)  
 RN 127475-91-6 CAPLUS  
 CN Thiophene, 2-(selenophene-2-yl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 119507-82-3  
 CMP C8 H6 S Se



14 ANSWER 25 OF 60 CAPLUS COPYRIGHT 2004 ACS ON STN  
 ACCESSION NUMBER: 1996:710178 CAPLUS  
 DOCUMENT NUMBER: 125:342351  
 TITLE: Nonlinear optical materials and apparatus  
 INVENTOR(S): Goba, Naoki; Kaino, Toshihiko; Tomaru, Akira  
 PATENT ASSIGNEE(S): Nippon Telegraph & Telephone, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.  
 CODEN: JKKXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

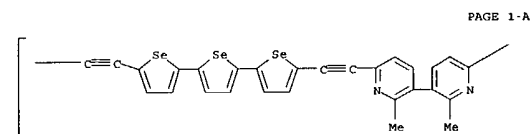
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08220574	A2	19960830	JP 1995-50307	19950216
JP 3271463	B2	20020402		

JP 5271463 B2 19950216  
 PRIORITY APPLN. INFO.: JP 1995-50307 19950216  
 AB A fast broadband nonlinear material comprises a polyarylene ethynylene  
 (Ar)nC.tplbond.C(Ar')mC.tplbond.C, where Ar, Ar' = (un)substituted

aromatic donor and acceptor ring with respect to conjugate system, resp.; n, m = 1-6; and n and/or m  $\geq 2$ .

IT 183596-82-9 183596-83-0 183596-86-3  
RL: TEM (Technical or engineered material use); USES (Uses)  
(third order nonlinear optical materials and apparatus)

(third-order nonlinear optical materials and apparatus)  
 RN 183596-82-9 CAPLUS  
 CN  
 Poly[[2,2'-dimethyl[3,3'-bipyridine]-6,6'-diyl]-1,2-ethynediyl[2,2':5',2''-terseleophene]-5,5''-diyl-1,2-ethynediyl] (9CI) (CA INDEX NAME)



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RN 183596-83-0 CAPLUS

L4 ANSWER 26 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1996:200132 CAPLUS  
 DOCUMENT NUMBER: 124:246135  
 TITLE: Organic superlattice material, production thereof and device therefrom  
 INVENTOR(S): Hamano, Koji; Kurata, Tetsuyuki; Fuchigami, Hiroyuki; Nobutoki, Eiiji; Fukada, Che; Nakao, Yukiyasu  
 PATENT ASSIGNEE(S): Mitsubishi Electric Corp, Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 25 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07325329	A2	19951212	JP 1994-120058	19940601
JP 2975530	B2	19991110		

AB An organic material, suitable for use as nonlinear optical and electronic materials, is prepared by laminating  $\geq 2$  kind of organic thin films having a thickness 0.5-100 nm, wherein the organic thin film comprises  $\pi$ -conjugated linear oligomers.

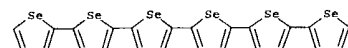
IT 174895-62-6 174895-72-8 174895-77-3  
174895-81-9 174895-91-1 174895-93-3  
174895-94-4 174895-97-7 174895-98-8  
174896-02-0 174896-27-6 174896-28-8

RL: DEV (Device component use); USES (Uses)  
(organic superlattice material, production thereof and device  
therefrom)

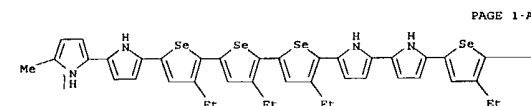
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therefrom)
RN      174895-62-6    CAPLUS
CN      2,2':5'',2''':5'''',2''''':5''''',2'''''''-Saxiselenophene (9CI)   (CA
INDEX NAME)

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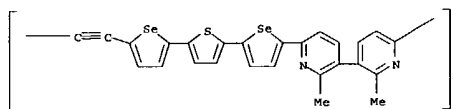
RN 174895-72-8 CAPLUS  
CN 2,2'-bi-1H-pyrrole, 5-methyl-5'-[3,3',3''-triethyl-5'''-[5'-(3,3',3'''-triethyl-5'-methyl-2,2':5',2''-terselenophen)-5-yl]-2,2'-bi-1H-pyrrol]-5-yl]-2,2':5',2''-terselenophen]-5-yl- (9CI) (CA INDEX NAME)



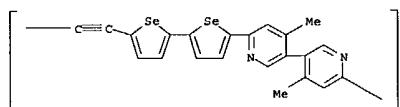
PAGE 1-A

Habte

L4 ANSWER 25 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
CN Poly[(2,2'-dimethyl[3,3'-bipyridine]-6,6'-diyl)-2,5-selenophenediyl-2,5-  
thiophenediyl-2,5-selenophenediyl-1,2-ethynediyl] (9CI) (CA INDEX NAME)

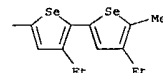


RN 183596-86-3 CAPLUS  
CN Poly[(4,4'-dimethyl[3,3'-bipyridine]-6,6'-diyl)[2,2'-biselenophene]-5,5'-diyl-1,2-ethynediyl] (9CI) (CA INDEX NAME)



L4 ANSWER 26 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

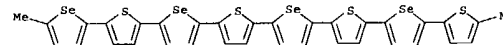
PAGE 1-B



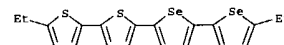
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RN      174895-77-3  CAPLUS
CN      Thiophene,
2-[5-[5-(5-methylselenophene-2-yl)-2-thienyl]selenophene-2-yl]-
5-[5-[5-[5-(5-methyl-2-thienyl)selenophene-2-yl]-2-thienyl]selenophene-2-
yl]- (9CI) (CA INDEX NAME)

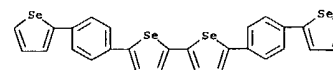
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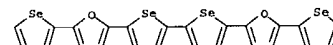
RN 174895-81-9 CAPLUS  
CN 2,2'-Bithiophene, 5-ethyl-5'-(5'-ethyl[2,2'-biselenophen]-5-yl)- (9CI)  
(CA INDEX NAME)



RN 174895-91-1 CAPLUS  
CN 2,2'-Biselenophene, 5,5'-bis(4-selenophene-2-ylphenyl)- (9CI) (CA INDEX  
NAME)



RN 174895-93-3 CAPLUS  
CN Furan, 2,2'-(2,2'-biselenophene)-5,5'-diylbis[5-selenophene-2-yl]- (9CI)  
(CA INDEX NAME)

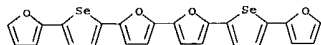


RN 174895-94-4 CAPLUS  
CN 2,2'-Bifuran, 5,5'-bis[5-(2-furanyl)selenophene-2-yl]- (9CI) (CA INDEX NAME)

06/17/2004



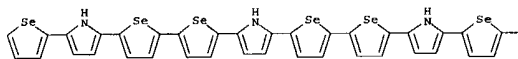
L4 ANSWER 26 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



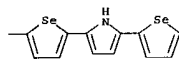
RN 174895-97-7 CAPLUS

CN 1H-Pyrrole,  
2,2'-[2,2'-biselenophene]-5,5'-diylbis[5-[5'-(5-selenophene-2-yl)-1H-pyrrol-2-yl][2,2'-biselenophen]-5-yl]- (9CI) (CA INDEX NAME)

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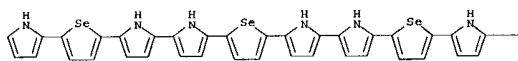
PAGE 1-B



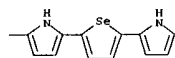
RN 174895-98-8 CAPLUS

CN 2,2'-Bi-1H-pyrrole, 5,5'-bis[5-[5'-(5-(1H-pyrrol-2-yl)selenophene-2-yl][2,2'-bi-1H-pyrrol]-5-yl]selenophene-2-yl]- (9CI) (CA INDEX NAME)

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RN 174896-03-8 CAPLUS

CN Pyridine,  
5-[5'-(5-selenophene-2-yl-2-pyridinyl)[2,2'-biselenophen]-5-yl]-  
2-[5'-(6-selenophene-2-yl-3-pyridinyl)[2,2'-biselenophen]-5-yl]- (9CI)  
(CA INDEX NAME)

L4 ANSWER 27 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1995:847709 CAPLUS

DOCUMENT NUMBER: 123:299816

TITLE: Electrochemical and structural studies of  
polyseleleniylthiophene nucleationAUTHOR(S): Peulon, Valerie; Barbey, Gerard; Valleton, Jean-Marc;  
Alexandre, StephaneCORPORATE SOURCE: Laboratoire d'Electrochimie Interfaciale et de Chimie  
Analytique, UFR des Sciences, Universite de Rouen,  
Mont-Saint-Aignan, 76821, Fr.

SOURCE: Synthetic Metals (1995), 74(1), 15-19

CODEN: SYMEDZ; ISSN: 0379-6779

PUBLISHER: Elsevier

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Potential-step expts. were used to study the electrodeposition of  
polyseleleniylthiophene (PSeT, poly(2-selenophene-2-yl)thiophene) films.  
The initial step in the formation of films is a nucleation process. The  
electrochem. data obtained show many similarities to that for the  
nucleation and growth of a metal film. Also, atomic force microscopy  
(AFM)was used to specify the growth morphol. for thin coverages of  
perchlorate-doped PSeT.

IT 127475-91-6

RL: PEP (Physical, engineering or chemical process); PRP (Properties);  
PROC (Process)

(electrodeposition and morphol. of perchlorate-doped)

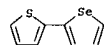
RN 127475-91-6 CAPLUS

CN Thiophene, 2-(selenophene-2-yl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 119507-82-3

CMP C8 H6 S Se



IT 119507-82-3

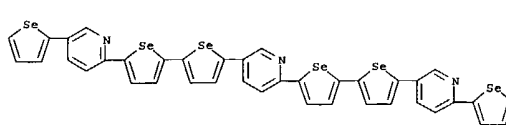
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)  
(electropolymerization in acetonitrile containing lithium perchlorate)

RN 119507-82-3 CAPLUS

CN Thiophene, 2-(selenophene-2-yl)- (9CI) (CA INDEX NAME)



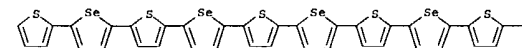
L4 ANSWER 26 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



RN 174896-27-6 CAPLUS

CN Thiophene, 2-[5-[5-[5-(5-selenophene-2-yl-2-thienyl)selenophene-2-yl]-2-  
thienyl)selenophene-2-yl]-5-[5-[5-(2-thienyl)selenophene-2-yl]-2-  
thienyl)selenophene-2-yl]- (9CI) (CA INDEX NAME)

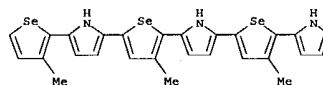
PAGE 1-A



PAGE 1-B



RN 174896-28-8 CAPLUS

CN 1H-Pyrrole, 2-[3-methyl-5-[5-(3-methylselenophene-2-yl)-1H-pyrrol-2-  
yl]selenophene-2-yl]-5-[4-methyl-5-(1H-pyrrol-2-yl)selenophene-2-yl]-  
(9CI) (CA INDEX NAME)

L4 ANSWER 28 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1995:733275 CAPLUS

DOCUMENT NUMBER: 123:127110

TITLE: Nonlinear optical materials and apparatus

INVENTOR(S): Kaino, Toshikuni; Ooba, Naoki; Tomaru, Akira;

Kurihara, Takashi

PATENT ASSIGNEE(S): Nippon Telegraph &amp; Telephone, Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.

CODEN: JKKXAF

Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07104326	A2	19950421	JP 1993-247216	19931001

PRIORITY APPLN. INFO.: JP 1993-247216 19931001

AB A high-conversion fast nonlinear material comprises a conjugated polymer  
containing a (substituted) thiophene (or selenophene) as a donor and a  
(substituted) pyridine as an acceptor, wherein the substituents are alkyl  
and alkoxy groups.

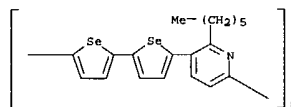
IT 166259-61-6P 166259-63-8P 166259-64-9P

166259-66-1P 166259-68-3P 166259-74-1P

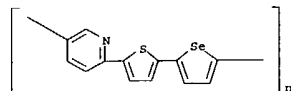
166259-79-6P

RL: DEV (Device component use); SPN (Synthetic preparation); PREP  
(Preparation); USES (Uses)  
(preparation and use of nonlinear optical polymers)

RN 166259-61-6 CAPLUS

CN Poly[(6-hexyl-2,5-pyridinediyl)[2,2'-biselenophene]-5,5'-diyl] (9CI) (CA  
INDEX NAME)

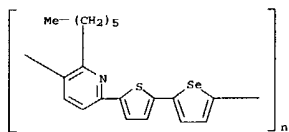
RN 166259-63-8 CAPLUS

CN Poly[(6-hexyl-5,2-pyridinediyl)-2,5-thiophenediyl-2,5-selenophenediyl] (9CI) (CA  
INDEX NAME)

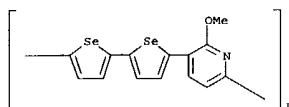
RN 166259-64-9 CAPLUS

CN Poly[(6-hexyl-5,2-pyridinediyl)-2,5-thiophenediyl-2,5-selenophenediyl]  
(9CI) (CA INDEX NAME)

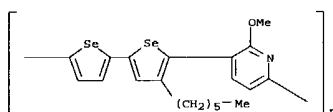
L4 ANSWER 28 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



RN 166259-66-1 CAPLUS  
 CN Poly[(6-methoxy-2,5-pyridinediyl)-(2,2'-biselenophene)-5,5'-diyl] (9CI)  
 (CA INDEX NAME)



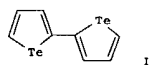
RN 166259-68-3 CAPLUS  
 CN Poly[(5-methoxy-2,5-pyridinediyl)-(4-hexyl-2,2'-biselenophene)-5,5'-diyl]  
 (9CI) (CA INDEX NAME)



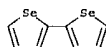
RN 166259-74-1 CAPLUS  
 CN Poly[(5-methyl-3,3'-bipyridine)-(6,6'-diyl)-(2,2'-biselenophene)-5,5'-diyl]  
 (9CI) (CA INDEX NAME)

L4 ANSWER 29 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN

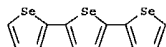
ACCESSION NUMBER: 1995:182439 CAPLUS  
 DOCUMENT NUMBER: 121:106010  
 TITLE: 2,2'-Bitellurophene and 2,2':5',2''-tertellurophene  
 AB novel high homologs of tellurophene  
 AUTHOR(S): Inoue, Shinobu; Jigami, Tetsuya; Nozoe, Hiroshi;  
 Otaubo, Tetsuo; Ogura, Fumio  
 CORPORATE SOURCE: Faculty Engineering, Hiroshima Univ.,  
 Higashi-Hiroshima, 724, Japan  
 SOURCE: Tetrahedron Letters (1994), 35(43), 8009-12  
 CODEN: TETRAY; ISSN: 0040-4039  
 PUBLISHER: Elsevier  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



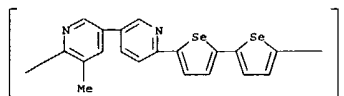
AB The title heterocyclic compds. (e.g., I) were prepared from tellurophene, and their spectroscopic and electrochem. properties were systematically compared together with those of other chalcogenophene congeners. Their electropolyms. gave poly(bitellurophene) and poly(tertellurophene) as black films, which both had higher elec. conductivities than poly(tellurophene) similarly obtained.  
 IT 6239-48-1, 2,2'-Biselenophene 67308-30-9,  
 2,2':5',2''-Terselenophene  
 RL: PRP (Properties)  
 (comparison of chalcogenophene oxidation potentials)  
 RN 6239-48-1 CAPLUS  
 CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)



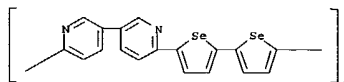
RN 67308-30-9 CAPLUS  
 CN 2,2':5',2''-Terselenophene (9CI) (CA INDEX NAME)



L4 ANSWER 28 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

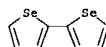


RN 166259-79-6 CAPLUS  
 CN Poly[(3,3'-bipyridine)-(6,6'-diyl)-(2,2'-biselenophene)-5,5'-diyl] (9CI)  
 (CA INDEX NAME)

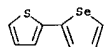


L4 ANSWER 30 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN

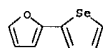
ACCESSION NUMBER: 1994:457597 CAPLUS  
 DOCUMENT NUMBER: 121:57597  
 TITLE: Electronic Structure of Bichalcophenes  
 AUTHOR(S): Novak, Igor; Ng, Siu Choon; Chua, Yek Tann; Mok, Chup  
 Yew; Huang, Hsing Hua  
 CORPORATE SOURCE: Department of Chemistry, National University of  
 Singapore, Singapore, 0511, Singapore  
 SOURCE: Journal of Physical Chemistry (1994), 98(20), 5240-3  
 CODEN: JPCHAX; ISSN: 0022-3654  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB He I and He II photoelectron spectra of some isomeric bichalcophenes containing Se, e.g., 2,2'-biselenophene, were recorded. The electronic structure was analyzed and spectra assigned from empirical considerations:  
 band contours, He I/He II intensity variations, and correlations with spectra of related mole. Semiempirical MO calcs. were used to estimate interring torsional barriers. The spectra indicate various interactions taking place among thiophene, furan, and selenophene  $\pi$  orbitals. The relation between electronic structure and formation of novel polymer materials is discussed.  
 IT 6239-48-1P, 2,2'-Biselenophene 119507-82-3P  
 130236-56-5P 156210-23-0P 156210-24-1P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and electronic structure of)  
 RN 6239-48-1 CAPLUS  
 CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)



RN 119507-82-3 CAPLUS  
 CN Thiophene, 2-(selenophene-2-yl)- (9CI) (CA INDEX NAME)

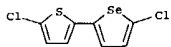


RN 130236-56-5 CAPLUS  
 CN Furan, 2-selenophene-2-yl- (9CI) (CA INDEX NAME)

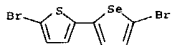


RN 156210-23-0 CAPLUS  
 CN Thiophene, 2-chloro-5-(5-chloroselenophene-2-yl)- (9CI) (CA INDEX NAME)

L4 ANSWER 30 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



RN 156210-24-1 CAPLUS  
CN Thiophene, 2-bromo-5-(5-bromoselenophene-2-yl)- (9CI) (CA INDEX NAME)

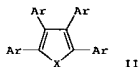


L4 ANSWER 31 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1993:495689 CAPLUS  
DOCUMENT NUMBER: 119:95689  
TITLE: Preparation of tetraarylthiophenes and tetraarylselenophenes by reactions of

diarylacetylenes

AUTHOR(S): with elemental sulfur and selenium  
Sawada, Kanji; Choi, Keun Soo; Kuroda, Masami;  
Taniguchi, Tetsuya; Ishii, Akihiko; Hoshino,  
Masamatsu; Nakayama, Juzo  
CORPORATE SOURCE: Fac. Sci., Saitama Univ., Urawa, 338, Japan  
SOURCE: Sulfur Letters (1993), 15(6), 273-83  
CODEN: SULED2; ISSN: 0278-6117  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
OTHER SOURCE(S): CASREACT 119:95689  
GI



AB A series of diarylacetylenes,  $\text{ArC}\equiv\text{Ctpbond.CAr}$  (I,  $\text{Ar} = \text{Ph}$ , 4- $\text{ClC}_6\text{H}_4$ , 1-, 2-naphthyl, 2-thienyl, etc.), react with elemental sulfur, when heated at 200-210° in benzene in a stainless steel autoclave or in refluxing o-dichlorobenzene, to afford the corresponding tetraarylthiophenes II (X

"

S) in good yields. The reaction of I with elemental selenium under similar conditions also provides a practical synthesis of tetraarylselenophenes II (X = Se). Heating diphenylacetylene with sulfur or selenium neat also gives rise to tetraphenylthiophene or tetraphenylselenophene in good yields and provides a very convenient synthesis of these compds. in larger quantities.

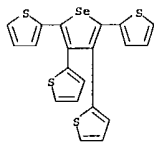
IT 144687-60-5P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

RN 144687-60-5 CAPLUS

CN Thiophene, 2,2',2'',2'''-(2,3,4,5-selenophenetetrayl)tetrakis- (9CI) (CA INDEX NAME)

L4 ANSWER 31 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



L4 ANSWER 32 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1993:147677 CAPLUS

DOCUMENT NUMBER: 118:147677

TITLE: Synthesis of 2-(2-selenophenyl)pyrrole from methyl 2-selenophenyl ketoxime and acetylene  
AUTHOR(S): Mikhaleva, A. I.; Nesterenko, R. N.; Vasil'tsov, A. M.; Kalabin, G. A.; Deryagina, E. N.; Korchevin, N. A.; Golovanova, N. I.

CORPORATE SOURCE: Irkutsk. Inst. Org. Khim., Irkutsk, 664033, Russia  
SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (1992), (5), 708-10  
CODEN: KGSSAQ; ISSN: 0132-6244

DOCUMENT TYPE: Journal

LANGUAGE: Russian

OTHER SOURCE(S): CASREACT 118:147677

AB The title Trofimov cyclization reaction afforded 10% 2-(2-selenophenyl)pyrrole (I) + 2% of its N-vinyl derivative. The starting ketoxime

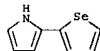
was a 1:1 syn:anti mixture; ketoxime remaining at the end of reaction was 77% syn, indicating predominant or exclusive cyclization of the anti isomer. The  $\pi$ -electrons are shifted toward the selenophene ring in I.

IT 146580-93-0P 146580-94-1P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

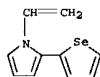
RN 146580-93-0 CAPLUS

CN 1H-Pyrrole, 2-selenophene-2-yl- (9CI) (CA INDEX NAME)



RN 146580-94-1 CAPLUS

CN 1H-Pyrrole, 1-ethenyl-2-selenophene-2-yl- (9CI) (CA INDEX NAME)



L4 ANSWER 33 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1993:111812 CAPLUS

DOCUMENT NUMBER: 118:111812

TITLE: Electrochemical synthesis and study of polyselenienylthiophene

AUTHOR(S): Peulon, Valerie; Barbey, Gerard; Outurquin, Francis; Paulmier, Claude

CORPORATE SOURCE: Lab. Electrochim. Interfac. Chim. Anal., Univ. Haute-Normandie, Mont-Saint-Aignan, 76134, Fr.

SOURCE: Synthetic Metals (1993), 53(2), 115-26

CODEN: SYMED2; ISSN: 0379-6779

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The authors describe the electrochem. preparation and behavior of polyselenienylthiophene (PSeT, poly(2-selenophene-2-yl)thiophene) in acetonitrile. The redox properties of the polymer are examined in cyclic voltammetry and chronocoulometry. Atomic absorption and

chronocoulometry are used to establish the maximum oxidation state or the doping level of this polymer. Polyselenienylthiophene has very promising applications.

IT 127475-91-6, Poly[(2-selenophene-2-yl)thiophene]

RL: PRP (Properties)

(electrochem. preparation and elec. conductivity and electrochem. redox reaction of)

RN 127475-91-6 CAPLUS

CN Thiophene, 2-(selenophene-2-yl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 119507-82-3

CMP C8 H6 S Se



IT 119507-82-3, 2-(Selenophene-2-yl)thiophene

RL: RCT (Reactant); RACT (Reactant or reagent)

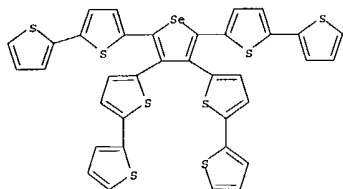
(polymerization of, electrochem., in acetonitrile containing lithium perchlorate)

RN 119507-82-3 CAPLUS

CN Thiophene, 2-(selenophene-2-yl)- (9CI) (CA INDEX NAME)



L4 ANSWER 34 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



L4 ANSWER 34 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1992:651168 CAPLUS

DOCUMENT NUMBER: 117:251168

TITLE: Tetra-2-thienyl- and tetrakis(5,2'-bithiophen-2-yl)thiophenes and -selenophenes

AUTHOR(S): Makayama, Juzo; Sawada, Kanji; Ishii, Akihiko; Hoshino, Masamatsu

CORPORATE SOURCE: Pac. Sci., Saitama Univ., Urawa, 338, Japan

SOURCE: Heterocycles (1992), 34(8), 1487-90

CODEN: HTCYAM; ISSN: 0385-5414

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 117:251168

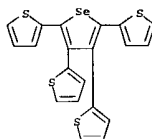
AB Heating a mixture of RC.tpbond.CR (R = 2-thienyl) and elemental selenium in benzene at 220-225° for 9 h in a stainless steel autoclave affords tetrathienylselenophene I in 65% yield. In similar ways, heating a mixture of bis(5,2'-bithiophen-2-yl)acetylene (II) and elemental sulfur or selenium gives tetrakis(5,2'-bithiophen-2-yl)thiophene III (X = S) or -selenophene IIII (X = Se), resp., in satisfactory yields.

IT 144687-60-5P 144687-63-8P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (preparation and oxidation potential of)

RN 144687-60-5 CAPLUS

CN Thiophene, 2,2',2'',2'''-(2,3,4,5-selenophenetetrayl)tetrakis- (9CI) (CA INDEX NAME)



RN 144687-63-8 CAPLUS

CN 2,2'-Bithiophene,

5,5'',5''',5''''-(2,3,4,5-selenophenetetrayl)tetrakis- (9CI) (CA INDEX NAME)



L4 ANSWER 35 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1990:591079 CAPLUS

DOCUMENT NUMBER: 113:191079

TITLE: Synthesis of mixed oligomeric heteroarylenes containing unsubstituted furan, thiophene, and selenophene rings. Their uv spectra and oxidation potentials

AUTHOR(S): Shabana, R.; Galal, A.; Mark, H. B., Jr.; Zimmer, Hans; Gronowitz, S.; Hoernfeldt, A. R.

CORPORATE SOURCE: Edison Sensor Technol. Cent., Univ. Cincinnati, Cincinnati, OH, 45221, USA

SOURCE: Phosphorus, Sulfur and Silicon and the Related Elements (1990), 48(1-4), 239-44

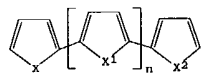
CODEN: PSSLEC; ISSN: 1042-6507

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 113:191079

GI



AB Mixed oligomeric 2,2'- and 2,2'-5',2'''-unsubstituted furan-, thiophene-, and selenophene-containing heteroarylenes I (X, X1, X2 = O, S, Se; n = 0, 1)

were synthesized. Thus, 2,5-dibromoselenophene was treated with Pd(PPh3)4

in MeOCH2CH2OMe, and then 2-selenopheneboronic acid followed by 1 N NaHCO3

to give 22% I (X = X1 = X2 = Se, n = 1). The UV spectra and oxidation potentials of I are discussed.

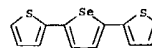
IT 51678-15-0 119507-82-3

RL: PRP (Properties)

(UV spectra and oxidation potential of)

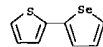
RN 51678-15-0 CAPLUS

CN Thiophene, 2,2'-(2,5-selenophenediyl)bis- (9CI) (CA INDEX NAME)



RN 119507-82-3 CAPLUS

CN Thiophene, 2-(selenophene-2-yl)- (9CI) (CA INDEX NAME)



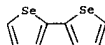
IT 6239-48-1P, 2,2'-Biselenophene

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)

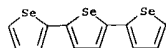
06/17/2004

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L4 ANSWER 35 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 (prepn. and oxidn. potential of)  
 RN 6239-48-1 CAPLUS  
 CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)



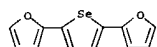
IT 67308-30-9P, 2,5-(2-Selenienyl)selenophene 130236-56-5P  
 130236-57-6P 130236-58-7P, 2,5-Bis(2-selenienyl)thiophene 130236-59-8P, 2,5-Bis(2-selenienyl)furan  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation, UV and oxidation potential of)  
 RN 67308-30-9 CAPLUS  
 CN 2,2':5',2''-Terselenophene (9CI) (CA INDEX NAME)



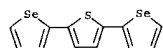
RN 130236-56-5 CAPLUS  
 CN Furan, 2-selenophene-2-yl- (9CI) (CA INDEX NAME)



RN 130236-57-6 CAPLUS  
 CN Furan, 2,2'-(2,5-selenophenediyl)bis- (9CI) (CA INDEX NAME)



RN 130236-58-7 CAPLUS  
 CN Thiophene, 2,5-diselenophene-2-yl- (9CI) (CA INDEX NAME)

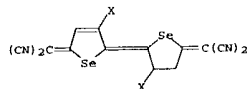


RN 130236-59-8 CAPLUS  
 CN Furan, 2,5-diselenophene-2-yl- (9CI) (CA INDEX NAME)

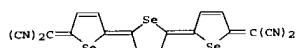
L4 ANSWER 36 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1990:450973 CAPLUS  
 DOCUMENT NUMBER: 113:50973  
 TITLE: Polydihydroselenophenes and conductive charge-transfer complexes  
 INVENTOR(S): Ogura, Fumio; Otsubo, Tetsumi; Aono, Yoshio; Yui, Koji  
 PATENT ASSIGNEE(S): Daiso Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXAXF  
 Patent  
 DOCUMENT TYPE: Japanese  
 LANGUAGE:  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:  

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01301675	A2	19891205	JP 1988-133707	19880530
JP 06004622	B4	19940119		

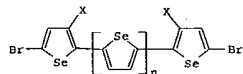
 PRIORITY APPL. INFO.: JP 1988-133707 19880530  
 OTHER SOURCE(S): MARPAT 113:50973  
 GI



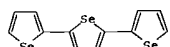
I



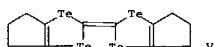
II



III



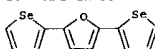
IV



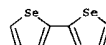
V

AB Polydihydroselenophenes I (X = H, halo; Se atoms are in trans-configuration) and II, and their charge transfer complexes, dibromopolyselenophenes (III; n = 0, 1; X = H when n = 1) and terselenophene (IV) are claimed. Lightwt. elec. conductors can be prepared  
 Thus, I (X = Br), prepared by 3-step reaction from biselenophene, was treated with V to give a 1:1 charge transfer complex having high conductivity  
 IT 6239-48-1, 2,2'-Biselenophene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (bromination of, for charge transfer complex)

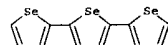
L4 ANSWER 35 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



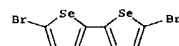
L4 ANSWER 36 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 RN 6239-48-1 CAPLUS  
 CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)



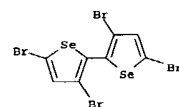
IT 67308-30-9P, 2,2':5',2''-Terselenophene  
 RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and bromination of, for charge transfer complex)  
 RN 67308-30-9 CAPLUS  
 CN 2,2':5',2''-Terselenophene (9CI) (CA INDEX NAME)



IT 116886-64-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (Reactant or reagent)  
 (preparation and reaction of, for charge transfer complex)  
 RN 116886-64-7 CAPLUS  
 CN 2,2'-Biselenophene, 5,5'-dibromo- (9CI) (CA INDEX NAME)

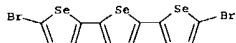


IT 116907-04-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and reaction of, with cyanoethylene oxide, for charge transfer complex)  
 RN 116907-04-1 CAPLUS  
 CN 2,2'-Biselenophene, 3,3',5,5'-tetrabromo- (9CI) (CA INDEX NAME)



IT 116886-65-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and reaction of, with malononitrile, for charge transfer complex)

L4 ANSWER 36 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 RN 116886-65-8 CAPLUS  
 CN 2,2':5',2''-Terselenophene, 5,5''-dibromo- (9CI) (CA INDEX NAME)



L4 ANSWER 37 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1990:413584 CAPLUS  
 DOCUMENT NUMBER: 113:13584  
 TITLE: Electrochemical synthesis, characterization and spectroelectrochemical studies of some conducting poly(heterolene) films  
 AUTHOR(S): Galai, Ahmed; Cunningham, David D.; Karagozler, Ali E.; Lewis, Edmund T.; Nkansah, Asare; Burkhardt, Armin; Ataman, O. Y.; Zimmer, Hans; Mark, Harry B., Jr.  
 CORPORATE SOURCE: Dep. Chem., Univ. Cincinnati, Cincinnati, OH, 45221-0172, USA  
 SOURCE: Proceedings - Electrochemical Society (1990), 90-2 (Proc. Symp. Electrochromic Mater., 1989), 179-91  
 CODEN: PESODO; ISSN: 0161-6374  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Conducting poly(heterolene) films were galvanostatically synthesized on optically transparent SnOx electrodes (OTE). UV-visible spectroelectrochem. has been employed to determine the formal potentials and n-values of the polymeric compds. The effects of the number of rings in the starting compds., the nature of the heteroatom, the substitutions in the monomeric ring and the nature of electrolyte on the spectral and electrochem. behavior of the polymers were investigated. The morphol. of the polymer films over the OTE was examined using the scanning electron microscope technique, revealing substantial differences to that of the film formed on Pt surfaces.  
 IT 127475-91-6  
 RL: PRP (Properties) (electrochem. preparation and spectra and elec. oxidation potential of)  
 RN 127475-91-6 CAPLUS  
 CN Thiophene, 2-(selenophene-2-yl)-, homopolymer (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 119507-82-3  
 CMF C8 H6 S Se

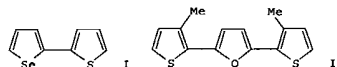


IT 119507-82-3  
 RL: RCT (Reactant); RACT (Reactant or reagent) (polymerization of, electrochem., on platinum or tin dioxide in acetonitrile containing tetrabutylammonium tetrafluoroborate or tetrabutylammonium hexafluorophosphate)  
 RN 119507-82-3 CAPLUS  
 CN Thiophene, 2-(selenophene-2-yl)- (9CI) (CA INDEX NAME)

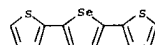
L4 ANSWER 37 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



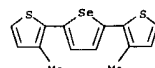
L4 ANSWER 38 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1990:35596 CAPLUS  
 DOCUMENT NUMBER: 112:35596  
 TITLE: Synthesis of mixed oligomeric heteroarylenes containing furan, thiophene, and selenophene rings; their UV spectra and oxidation potentials  
 AUTHOR(S): Zimmer, Hans; Shabana, R.; Galai, A.; Mark, H. B., Jr.; Gronowitz, S.; Hoernfeldt, A. B.  
 CORPORATE SOURCE: Dep. Chem., Univ. Cincinnati, Cincinnati, OH, 45221, USA  
 SOURCE: Phosphorus, Sulfur and Silicon and the Related Elements (1989), 42(3-4), 171-6  
 CODEN: PSSLEC; ISSN: 1042-6507  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 112:35596  
 GI



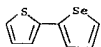
AB Eleven mixed oligomeric five-membered heteroarylenes, e.g. I and II, have been prepared by the cross-coupling reaction of the Grignard reagents derived of the appropriately substituted thiophenes with either the 2-bromoheteroarylenes or the 2,5-dibromoheteroarylenes derived of furan, thiophene, and/or selenophene. The UV spectra and oxidation potential of the products are discussed on the basis of co-planarity.  
 IT 51678-15-0P 119485-25-5P 119507-82-3P 119507-83-4P 119507-85-6P 119507-86-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation) (preparation, proton NMR, UV spectra, and oxidation potential of)  
 RN 51678-15-0 CAPLUS  
 CN Thiophene, 2,2'-(2,5-selenophenediyl)bis- (9CI) (CA INDEX NAME)



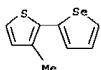
RN 119485-25-5 CAPLUS  
 CN Thiophene, 2,2'-(2,5-selenophenediyl)bis[3-methyl- (9CI) (CA INDEX NAME)



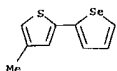
L4 ANSWER 39 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 RN 119507-82-3 CAPLUS  
 CN Thiophene, 2-(selenophene-2-yl)- (9CI) (CA INDEX NAME)



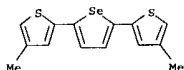
RN 119507-83-4 CAPLUS  
 CN Thiophene, 3-methyl-2-(selenophene-2-yl)- (9CI) (CA INDEX NAME)



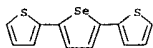
RN 119507-85-6 CAPLUS  
 CN Thiophene, 4-methyl-2-(selenophene-2-yl)- (9CI) (CA INDEX NAME)



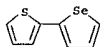
RN 119507-86-7 CAPLUS  
 CN Thiophene, 2,2'-(2,5-selenophenediyl)bis[4-methyl- (9CI) (CA INDEX NAME)



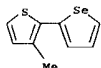
L4 ANSWER 39 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 IT 51678-15-09 119507-83-3P 119507-83-4P  
 119507-84-5P 119507-85-6P 119507-86-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation, UV absorption, and oxidation potential of)  
 RN 51678-15-0 CAPLUS  
 CN Thiophene, 2,2'-(2,5-selenophenediyl)bis- (9CI) (CA INDEX NAME)



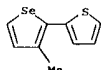
RN 119507-82-3 CAPLUS  
 CN Thiophene, 2-(selenophene-2-yl)- (9CI) (CA INDEX NAME)



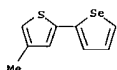
RN 119507-83-4 CAPLUS  
 CN Thiophene, 3-methyl-2-(selenophene-2-yl)- (9CI) (CA INDEX NAME)



RN 119507-84-5 CAPLUS  
 CN Thiophene, 2-(3-methylselenophene-2-yl)- (9CI) (CA INDEX NAME)



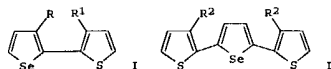
RN 119507-85-6 CAPLUS  
 CN Thiophene, 4-methyl-2-(selenophene-2-yl)- (9CI) (CA INDEX NAME)



RN 119507-86-7 CAPLUS  
 CN Thiophene, 2,2'-(2,5-selenophenediyl)bis[4-methyl- (9CI) (CA INDEX NAME)

Habte

L4 ANSWER 39 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1989:134566 CAPLUS  
 DOCUMENT NUMBER: 110:134566  
 TITLE: Synthesis of mixed oligomeric heteroarylenes containing thiophene and selenophene rings. Their UV spectra and oxidation potentials  
 AUTHOR(S): Shabana, R.; Galal, A.; Mark, Harry B., Jr.; Zimmer, Hans; Gronowitz, Salo; Hoernfeldt, A. B.  
 CORPORATE SOURCE: Dep. Chem., Univ. Cincinnati, Cincinnati, OH, 45221-0172, USA  
 SOURCE: Journal of the Chemical Society, Chemical Communications (1988), (15), 988-9  
 CODEN: JCCCAT; ISSN: 0022-4936  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 110:134566  
 GI

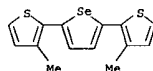


AB Mixed oligomers containing thiophene and selenophenone rings, e.g., I (R = H, Me; R = Me, R1 = H) and II (R2 = H, Me) were synthesized. Their UV spectra and oxidation potentials were determined and discussed in terms of coplanarity of the rings and the +/- effect of the Me substituent.

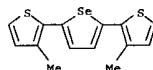
IT 119485-26-6P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and conductivity of)  
 RN 119485-26-6 CAPLUS  
 CN Thiophene, 2,2'-(2,5-selenophenediyl)bis[3-methyl-, homopolymer (9CI)  
 (CA INDEX NAME)

CM 1

CRN 119485-25-5  
 CMF C14 H12 S2 Se

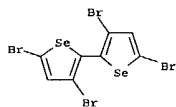


L4 ANSWER 39 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 IT 119485-35-5P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation, properties, and polymerization of)  
 RN 119485-25-5 CAPLUS  
 CN Thiophene, 2,2'-(2,5-selenophenediyl)bis[3-methyl- (9CI) (CA INDEX NAME)

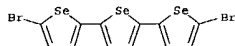


06/17/2004

L4 ANSWER 40 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1988:561360 CAPLUS  
 DOCUMENT NUMBER: 109:161360  
 TITLE: Extensively conjugated homologs of selenophene-TCNQ  
 as  
 new electron acceptors  
 AUTHOR(S): Yui, Koji; Aino, Yoshio; Otsubo, Tetsuo; Ogura, Fumio  
 CORPORATE SOURCE: Fac. Eng., Hiroshima Univ., Higashi-Hiroshima, 724,  
 Japan  
 SOURCE: Chemistry Letters (1988), (7), 1179-82  
 CODEN: CMLTAG; ISSN: 0366-7022  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB 5,5'-Bis(dicyanomethylene)-5,5'-dihydro-2,2'-biselenophene, its  
 3,3'-dibromo derivative, and 5,5'-bis(dicyanomethylene)-5,5'-dihydro-  
 2,2':5',2''-terselenophene were synthesized as extensively conjugated  
 homologs of selenophene-TCNQ. The 3,3'-dibromo compound possesses a  
 considerably better accepting character than selenophene-TCNQ or the  
 other  
 extended homologs and can form highly conductive mol. complexes.  
 IT 116907-04-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and reactions of, for conductor preparation)  
 RN 116907-04-1 CAPLUS  
 CN 2,2'-Biselenophene, 3,3',5,5'-tetrabromo- (9CI) (CA INDEX NAME)

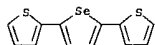


IT 116886-65-8P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and reactions of, in conductor preparation)  
 RN 116886-65-8 CAPLUS  
 CN 2,2':5',2''-Terselenophene, 5,5'-dibromo- (9CI) (CA INDEX NAME)

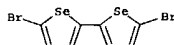


IT 116886-64-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and reactions of, in preparation of conductor)  
 RN 116886-64-7 CAPLUS

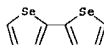
L4 ANSWER 41 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1987:138828 CAPLUS  
 DOCUMENT NUMBER: 106:138828  
 TITLE: 'Substitutional alloys' of organic polymeric  
 conductors  
 AUTHOR(S): Ferraris, John P.; Skiles, Gary D.  
 CORPORATE SOURCE: Programs Chem., Univ. Texas, Dallas, Richardson, TX,  
 75083-0688, USA  
 SOURCE: Polymer (1987), 28(2), 179-82  
 CODEN: POLMAG; ISSN: 0032-3861  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Elec. conducting copolymers of thiophene with pyrrole, N-methylpyrrole,  
 and furan, whose conductivities vary as a function of the heteroatom  
 composition were prepared. The use of a tri-ring monomer allows the  
 production of  
 these 'substitutional alloys' with a controlled heteroatom composition  
 and  
 formally known sequence distribution.  
 IT 51678-15-0  
 RL: PRP (Properties)  
 (peak oxidation potential of)  
 RN 51678-15-0 CAPLUS  
 CN Thiophene, 2,2'-(2,5-selenophenediyl)bis- (9CI) (CA INDEX NAME)



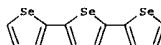
L4 ANSWER 40 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 CN 2,2'-Biselenophene, 5,5'-dibromo- (9CI) (CA INDEX NAME)



IT 6239-48-1, 2,2'-Biselenophene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with bromosuccinimide in conductor preparation)  
 RN 6239-48-1 CAPLUS  
 CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)



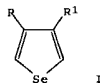
IT 67308-30-9, 2,2':5',2''-Terselenophene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reactions of, with bromosuccinimide in conductor preparation)  
 RN 67308-30-9 CAPLUS  
 CN 2,2':5',2''-Terselenophene (9CI) (CA INDEX NAME)



L4 ANSWER 42 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1985:495018 CAPLUS  
 DOCUMENT NUMBER: 103:95018  
 TITLE: Polymeric conducting material from polyselenophene  
 and  
 its use in electrochemical cells  
 INVENTOR(S): Gazard, Maryse; Montheard, Jean Pierre; Champagne,  
 Monique; Dubois, Jean Claude  
 PATENT ASSIGNEE(S): Thomson CSF S. A., Fr.  
 SOURCE: Fr. Demande, 13 pp.  
 CODEN: FRXXBL  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2554133	A1	19850503	FR 1983-17314	19831028
FR 2554133	B1	19851227		

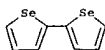
PRIORITY APPLN. INFO.: FR 1983-17314 19831028  
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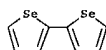
AB Organic conductive materials obtained by electrochem. polymerization of  
 at least 1  
 monomer of a base of substituted or nonsubstituted selenophene type are  
 rendered conductive by incorporating ions (e.g. BF<sub>4</sub><sup>-</sup>) in them during the  
 polymerization. These materials are used in electrochem. cells designed  
 as  
 electrochem. recording apparatus or batteries. The polymer corresponds  
 to the  
 general formula (MyX-y)n, where X<sup>-</sup> is an anion provided by the  
 electrolyte used in the polymerization, y is the proportion of anion  
 with respect  
 to 1 mol of the monomer M, and n is the degree of polymerization. The  
 monomer (I;  
 R and R1 are H or alkyl, alkoxyl, aryl or substituted aryl groups) is a  
 selenophene in which the preferred monomer has R = H and R1 = Me or Ph.  
 Electrochem. polymerization occurs by the intermediary of a dimer. The  
 anion can  
 be ClO<sub>4</sub><sup>-</sup>, BF<sub>4</sub><sup>-</sup>, PF<sub>6</sub><sup>-</sup>, I<sup>-</sup>, or Br<sup>-</sup>. An electrochem. cell consists of an  
 electrolyte solution with an anode covered by a layer of the doped  
 polymeric  
 material and a counter electrode. The anode and the cell are  
 transparent.  
 The electrochem. cell can be used to store and restore energy by  
 oxidation-reduction. In an example, selenophene can be prepared by the  
 well-known  
 method (S. Gronowitz, 1976) of passing acetylene at 450° over a  
 mixture of Al and Se. The electrochem. oxidation potential of



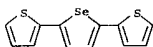
L4 ANSWER 42 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)  
 (.apprx.2 V) is higher than the oxidn. potential of the solvent  
 ordinarily  
 used (MeCN, methylene chloride, etc.). This monomer can then be used to  
 prep. the dimer by the action of I in the presence of HgO, followed by a  
 coupling reaction of the 2-iodoselenophene in the presence of Cu. The  
 2,2'-biselenophene (10-2 mol/L) and Et<sub>4</sub>NBF<sub>4</sub> (10-1 mol/L) in 1 L of MeCN  
 are electrolyzed in a cell using e.g. a Pt sheet anode and a Pt wire  
 cathode at c.d. 150 µA/cm<sup>2</sup> and voltage >0.9 V. At the end of 1 min of  
 electrolysis, a film of the polymer .apprx.450 Å thick is recovered  
 contg. BF<sub>4</sub><sup>-</sup> responsible for the cond. (.apprx.10-3 Ω-1-cm-1) of the  
 polymer.  
 IT 6239-48-1P  
 RL: PREP (Preparation)  
 (preparation of, by coupling reaction of iodoseleophene in presence  
 of  
 copper)  
 RN 6239-48-1 CAPLUS  
 CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)



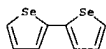
L4 ANSWER 43 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1985:158731 CAPLUS  
 DOCUMENT NUMBER: 102:158731  
 TITLE: Influence of 3-4 substitutions on properties of  
 five-membered polyheterocycles  
 AUTHOR(S): Bureau, J. M.; Gazard, M.; Champagne, M.; Dubois, J.  
 C.; Tourillon, G.; Garnier, F.  
 CORPORATE SOURCE: Lab. Cent. Rech., Thomson-CSF, Orsay, 91401, Fr.  
 SOURCE: Molecular Crystals and Liquid Crystals (1985),  
 118(1-4), 235-9  
 CODEN: MCLCA5; ISSN: 0026-8941  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Thin films of 3-4 substituted 5-membered polyheterocycles derived from  
 pyrrole and thiophene were electrochem. synthesized, showing reversible  
 electrochem. oxidation and reduction processes, and conductivities  
 varying  
 between 10-4 and 102 Ω-1cm-1. The absorption spectra of their doped  
 and undoped states and their switching time and lifetime make some of  
 these polymers interesting for electrochromic applications.  
 IT 95831-28-0  
 RL: USES (Uses)  
 (elec. and optical properties of thin films of)  
 RN 95831-28-0 CAPLUS  
 CN 2,2'-Biselenophene, homopolymer (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 6239-48-1  
 CMF C8 H6 Se2



L4 ANSWER 44 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1984:419796 CAPLUS  
 DOCUMENT NUMBER: 101:19796  
 TITLE: Comparison of the phototoxicity of α-terthienyl  
 with that of a seleno and of an oxygen analog  
 AUTHOR(S): Garcia, F. J.; Yamamoto, E.; Abramowski, Z.; Downum,  
 K.; Towers, G. H. N.  
 CORPORATE SOURCE: Bot. Dep., Univ. British Columbia, Vancouver, BC, V6T  
 1W5, Can.  
 SOURCE: Photochemistry and Photobiology (1984), 39(4), 521-4  
 CODEN: PHCBAP; ISSN: 0031-8655  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Two analogs of α-terthienyl, namely 2,5-di(2'-thienyl)selenophene  
 and 2,5-di(2'-thienyl)furan have been prepared and their phototoxicities  
 toward several microorganisms have been compared. Dose response studies  
 with Escherichia coli indicate that α-terthienyl is more active than  
 these analogs. α-Terthienyl was the most effective of the 3 compds.  
 in the photoinactivation of yeast alc. dehydrogenase. Diagnostic tests  
 showed the participation of singlet O in the photosensitization to  
 different extents by these 3 thiophenes.  
 IT 51678-15-0P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and phototoxicity of, to microorganism)  
 RN 51678-15-0 CAPLUS  
 CN Thiophene, 2,2'-(2,5-selenophenediyl)bis- (9CI) (CA INDEX NAME)

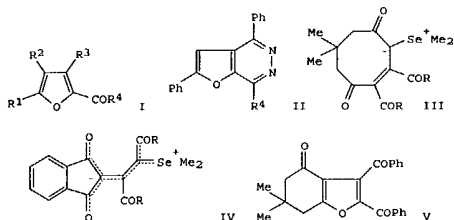
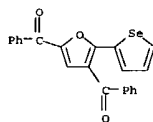


L4 ANSWER 45 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1983:179132 CAPLUS  
 DOCUMENT NUMBER: 98:179132  
 TITLE: Nickel-catalyzed synthesis of arylacetic esters from  
 arylzinc chlorides and ethyl bromoacetate  
 AUTHOR(S): Klingstedt, T.; Frejd, T.  
 CORPORATE SOURCE: Org. Chem. 1, Chem. Cent., Univ. Lund, Lund, S-220  
 07,  
 Swed.  
 SOURCE: Organometallics (1983), 2(5), 598-600  
 CODEN: ORGN7; ISSN: 0276-7333  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB RCH<sub>2</sub>CO<sub>2</sub>Et (R = Ph, 2-MeC<sub>6</sub>H<sub>6</sub>, 2-MeOC<sub>6</sub>H<sub>4</sub>, 2-furyl, 2-thienyl, 2-selenienyl)  
 were prepared in 38-60% yields by coupling RZnCl with BrCH<sub>2</sub>CO<sub>2</sub>Et in the  
 presence of catalytic amts. of bis(acetylacetonato)nickel(II)-R1Ph<sub>2</sub>P (R1  
 = Ph, cyclohexyl). Also formed were 13-15% the corresponding R2. No  
 coupling occurred with 3-pyridylzinc chloride.  
 IT 6239-48-1P  
 RL: FORM (Formation, nonpreparative); PREP (Preparation)  
 (formation of, during reaction of arylzinc chlorides with Et  
 bromoacetate)  
 RN 6239-48-1 CAPLUS  
 CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)



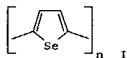
LA ANSWER 46 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1983:179122 CAPLUS  
 DOCUMENT NUMBER: 98:179122  
 TITLE: Reaction of selenonium ylides with activated  
 acetylenes  
 AUTHOR(S): Magdesieva, N. N.; Kyandzhetsian, R. A.; Gordeev, M.  
 P.  
 CORPORATE SOURCE: Mon. Gos. Univ., Moscow, USSR  
 SOURCE: Zhurnal Organicheskoi Khimii (1982), 18(12), 2514-23  
 CODEN: ZORKAE; ISSN: 0514-7492  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 OTHER SOURCE(S): CUBAS  
 G: CASREACT 98:179122

L4 ANSWER 46 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

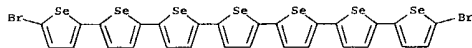


AD	Treatment of Me2Se:CHACOR Rr- (R = Ph, 2-thienyl, 2-selenenyl) with BzC.tplbond.CBz in the presence of base gave mixts. containing 28-51% I
(R1 =	Ph, R2 = H, R3 = Bz, R4 = Ph, 2-thienyl, 2-selenenyl) and 10-43% I (R1 = Ph, R2 = Bz, 2-thienyl, R3 = H, R4 = Ph; R1 = 2-selenenyl, R2 = Bz, R3 = H, R4 = Ph). Cyclocondensation of the 2-aryl-4,5-diaroyl derivs. with N2H4 gave 25-75% II (R4 as above). Treatment of the dimethylselenonium ylides of dimedon and indandione with BzC.tplbond.CBz or MeO2C.tplbond.CO2Me gave new selenonium ylides via ring enlargement III (dimedon ylide) or 1,3-migration of the onium group IV (indandione ylide).
IT	Dimedon ylide and BzC.tplbond.CBz also gave V.
8538B-87-0P	
RL:	SPN (Synthetic preparation); PREP (Preparation)
	(preparation of)
RN	8538B-87-0 CAPLUS
CN	Methanone, (5-selenophene-2-yl-2,4-furandiyl)bis[phenyl- (9CI) (CA INDEX NAME)

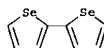
L4 ANSWER 47 OF 60 CAPLUS COPYRIGHT 2004 ACS ON STN  
ACCESSION NUMBER: 1981:498406 CAPLUS  
DOCUMENT NUMBER: 95:98406  
TITLE: Polymerization of aromatic nuclei. XXVIII.  
Synthesis  
AUTHOR(S): and properties of poly(2,5-selenienylene)  
Bezari, Massimo; Kovacic, Peter; Gronowitz, Salo;  
Hoernfeldt, Anna Britta  
CORPORATE SOURCE: Dep. Chem., Univ. Wisconsin, Milwaukee, WI, 53201,  
USA  
SOURCE: Journal of Polymer Science, Polymer Letters Edition  
(1981), 19(7), 347-53  
CODEN: JPYBAN; ISSN: 0360-6384  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
GI



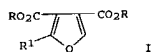
AB Poly(2,5-selenienylene) (I) [76818-10-7] is prepared from  
2,5-dibromoselenophene by conversion to a Grignard reagent and  
polymerization in  
the presence of Ni(II) salt or ClCH<sub>2</sub>CH=CHCH<sub>2</sub>Cl (II) [764-41-0]. Ni(II)  
acetylacetonate [3264-82-2] and bipyridyldichloronickel [22775-90-2]  
gave I in better yield and with d.p. closer to the maximum value of 6-12  
than  
II, due to formation of cross-coupled product with II. ESR spectra  
showed that the radical concns. in I are similar to those in  
poly(2,5-thienylene)  
and poly(p-phenylene).  
IT 78598-37-5P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, in presence of bipyridyl dichloronickel)  
RN 78598-37-5 CAINDEX NAME  
CN 1,1'.5'',1'':5'',1''':5'''-di-(2,5-septigelenylene), 5,5'-sepienedi-(2,5)-di-(CA INDEX NAME)



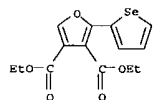
14 ANSWER 48 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1980:197806 CAPLUS  
 DOCUMENT NUMBER: 92:197806  
 TITLE: Conformational study of 2,2'-biselenophene partially oriented in a nematic liquid crystal phase by PMR spectra including selenium-77 satellites  
 AUTHOR(S): Chidichimo, G.; Lelj, F.; Longeri, M.; Russo, N.; Veracini, C. A.  
 CORPORATE SOURCE: Dip. Chim., Univ. Calabria, Cosenza, 87030, Italy  
 SOURCE: Chemical Physics Letters (1979), 67(2-3), 384-7  
 CODEN: CHPLBC; ISSN: 0009-2614  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB Different models for the conformational equilibrium of 2,2'-biselenophene are examined in order to reproduce the DH-H and DSe-H direct dipolar couplings obtained from the NMR in liquid crystal solvents. The results allow the rigorous exclusion of various conformational possibilities and confine the conformation to an equilibrium between 2 twisted conformers; the transoid one is most abundant.  
 IT 6239-46-1  
 RL: PRP (Properties)  
 relation (proton NMR of, in nematic liquid crystal phase, conformation in  
 to)  
 RN 6239-48-1 CAPLUS  
 CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)



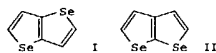
L4 ANSWER 49 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1979:420212 CAPLUS  
 DOCUMENT NUMBER: 91:20212  
 TITLE: Synthesis of trisubstituted furans  
 AUTHOR(S): Magdesieva, N. N.; Le Nguyen Nghi; Koloskova, N. M.  
 CORPORATE SOURCE: Mosk. Gos. Univ., Moscow, USSR  
 SOURCE: Zhurnal Organicheskoi Khimii (1979), 15(3), 609-12  
 CODEN: ZORRAE; ISSN: 0514-7492  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 OTHER SOURCE(S): CASREACT 91:20212  
 GI



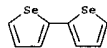
AB Trisubstituted furans I (R = Me, Et; R1 = 2-thienyl, 2-furyl, selenophen-2-yl) were prepared in 28-38% yield by reaction of Me2Se+CH2COR1 Br- with RO2CC.tplbond.CO2R. The spectral data for I was tabulated.  
 IT 70585-76-1P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (preparation and spectra of)  
 RN 70585-76-1 CAPLUS  
 CN 3,4-Furandicarboxylic acid, 2-selenophene-2-yl-, diethyl ester (9CI) (CA INDEX NAME)



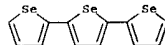
L4 ANSWER 51 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1977:601375 CAPLUS  
 DOCUMENT NUMBER: 87:201375  
 TITLE: On the reaction between acetylene and selenium  
 AUTHOR(S): Gronowitz, S.; Konar, A.; Hoernfeldt, A. B.  
 CORPORATE SOURCE: Chem. Cent., Univ. Lund, Lund, Swed.  
 SOURCE: Chemica Scripta (1976), 10(4), 159-64  
 CODEN: CSRPB9; ISSN: 0004-2056  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 GI



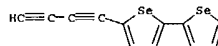
AB Selenoselenophenes I and II were prepared starting from Li deriva. of 2-(3-bromo-2-selenienyl)-1,3-dioxolane and 2-(3-selenienyl)-1,3-dioxolane, resp., by reaction with Se and ClCH2CO2Me followed by Dieckmann cyclization. Only I was detected among the products of the reaction between Se and acetylene. In addition, about 30 other compds. were identified, for example 2- and 3-alkylselenophenes, 2- and 3-alkylselenoselenophenes, biselenienyls, benzo[h]selenophene, tricyclic-fused systems, and 2-methyl-1,3-diselenacyclopent-4-ene. The syntheses of some of the above-products are described.  
 IT 6239-48-1P  
 RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)  
 RN 6239-48-1 CAPLUS  
 CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)



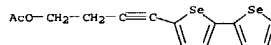
L4 ANSWER 50 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1978:503825 CAPLUS  
 DOCUMENT NUMBER: 89:103825  
 TITLE: Biogenesis of thiophene and selenophene derivatives in  
 AUTHOR(S): Liatriis species and Tagetes erecta  
 Haenain, S. Nazrul; Athar, H. S. A.; Ahmad, S. I.  
 CORPORATE SOURCE: Dep. Biochem., Univ. Karachi, Karachi, Pak.  
 SOURCE: Pakistan Journal of Botany (1977), 9(1), 33-7  
 CODEN: PJBOB6; ISSN: 0556-3321  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB L-Selenophene (1)-75Se fed to T. erecta did not result in the formation of radioactive selenophenes, whereas using 75Se-Na2SeO3, terselenyl, 5-(3-buten-ynyl)-2,2'-biselenyl, 5-(4-acetoxy-1-butenyl)-2,2'-biselenyl, and 2-acetyl-3-hydroxy-5-(1-propynyl)selenophene were formed. Similarly Liatriis incorporated the inorg. Se, but not I.  
 IT 67308-30-9 67308-31-0 67308-32-1  
 RL: BIOL (Biological study) (as selenium metabolite in Tagetes erecta and Liatriis)  
 RN 67308-30-9 CAPLUS  
 CN 2,2':5',2''-Terselenophene (9CI) (CA INDEX NAME)



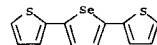
RN 67308-31-0 CAPLUS  
 CN 2,2'-Biselenophene, 5-(1,3-butadiynyl)- (9CI) (CA INDEX NAME)



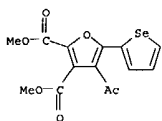
RN 67308-32-1 CAPLUS  
 CN 3-Butyn-1-ol, 4-[2,2'-biselenophen]-5-yl-, acetate (9CI) (CA INDEX NAME)



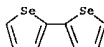
L4 ANSWER 52 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1974:95836 CAPLUS  
 DOCUMENT NUMBER: 80:95836  
 TITLE: Selenium heterocycles. XII. Heat-induced transformation of 1,2,3-selenadiazoles to disubstituted selenophenes  
 AUTHOR(S): Lalezari, I.; Shafiee, A.; Rabet, F.; Yalpani, M.  
 CORPORATE SOURCE: Fac. Pharm., Univ. Tehran, Teheran, Iran  
 SOURCE: Journal of Heterocyclic Chemistry (1973), 10(6), 953-5  
 CODEN: JHTCAD; ISSN: 0022-152X  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB 4-Aryl-1,2,3-selenadiazoles on heating afforded 2,5-diarylselenophenes and small quantities of 2,4-diarylselenophenes. Monoarylacetylenes and Se behaved similarly. Phenylacetylene and S gave 2,4-diphenylthiophene. Mechanistic aspects of these reactions are discussed.  
 IT 51678-15-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)  
 RN 51678-15-0 CAPLUS  
 CN Thiophene, 2,2'-(2,5-selenophenediyl)bis- (9CI) (CA INDEX NAME)



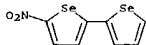
L4 ANSWER 53 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1974:70623 CAPLUS  
 DOCUMENT NUMBER: 80:70623  
 TITLE: Selenium ylides. III. Synthesis of tetrasubstituted furans  
 AUTHOR(S): Magdesieva, N. N.; Kyandzhetsian, R. A.; Danilenko, V.  
 CORPORATE SOURCE: Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR  
 SOURCE: Khimiya Geterotsiklicheskikh Soedinenii (1973), (11), 1447-50  
 CODEN: KGSSAQ; ISSN: 0132-6244  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 GI For diagram(s), see printed CA Issue.  
 AB Tetrasubstituted furans I and II (R1 = Me, Ph, R2 = Me, Ph, 2-thienyl, 2-selenenyl) were prepared in 40-93% yields by boiling ylide III with MeO2CC.tpbond.CCO2Me in CHCl3 for 10 hr.  
 IT 51626-11-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)  
 RN 51626-11-0 CAPLUS  
 CN 2,3-Furandicarboxylic acid, 4-acetyl-5-(selenophene-2-ylcarbonyl)-, dimethyl ester (9CI) (CA INDEX NAME)



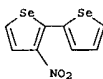
L4 ANSWER 54 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1972:513657 CAPLUS  
 DOCUMENT NUMBER: 77:113657  
 TITLE: Quantum-mechanical study on the stereochemistry of the isomeric bipyrrroles bifurans, bithiophenes, thienylfurans, and biselenophenes  
 AUTHOR(S): Galasso, V.; Trinajstić, N.  
 CORPORATE SOURCE: Ist. Chim., Univ. Trieste, Trieste, Italy  
 SOURCE: Tetrahedron (1972), 28(16), 4419-29  
 CODEN: TETRA8; ISSN: 0040-4020  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB The most probable conformational arrangements of isomeric bipyrrroles, bifurans, bithiophenes, thienyl furans, and biselenophenes were investigated using the Extended Hückel MO approach. The barrier heights between the syn and anti forms decrease sharply on going along the series bifurans, bithiophenes, and biselenophenes. The barrier height for the interconversion syn ↔ anti follows the trend: 2,2' > 2,3' > 3,3'. The energy difference between the syn and anti conformers is small (except in the case of 2,2'-bifuran). Planar syn conformation is predicted more stable than anti for 2,2' and 2,3'-isomers (except for 2,3'-biselenophene), while the 3,3'-isomers are predicted to have anti conformation more stable than syn. The tendency to assume a nonplanar conformation at the equilibrium is shown by 1,1'-bipyrrole, 2,3'-biselenophene, 3,3'-bithiophene and 3,3'-biselenophene. For the two energetically most favorable conformations of each mol. the charge distribution is calculated using the complete neglect of differential overlap/2 method.  
 IT 6239-48-1  
 RL: PRP (Properties) (rotational potential barrier in, mol. orbital calcn. in relation to)  
 RN 6239-48-1 CAPLUS  
 CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)



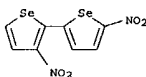
L4 ANSWER 55 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1971:42249 CAPLUS  
 DOCUMENT NUMBER: 74:42249  
 TITLE: Biselenophenes. IV. Nitration of 2,2'-biselenophene  
 AUTHOR(S): Dell'Erba, Carlo; Garbarino, Giacomo  
 CORPORATE SOURCE: Ist. Chim. Org., Univ. Genova, Genova, Italy  
 SOURCE: Gazzetta Chimica Italiana (1970), 100(8-9), 788-95  
 CODEN: GCITA9; ISSN: 0016-5603  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Italian  
 GI For diagram(s), see printed CA Issue.  
 AB The 5-position is favored in the nitration of 2,2'-biselenophene (I). I gives mixts. of 5-nitro-2,2'-biselenophene (II) and 3-nitro-2,2'-biselenophene (III). The II-III ratio increases with temperature II and III are nitrated to give the 5,5'-dinitro (IV) and 3,5'-dinitro (V) deriva.  
 IT 30310-36-2P 30310-37-3P 30310-38-4P 30310-39-5P 30310-40-8P  
 RL: SPN (Synthetic preparation); PREP (Preparation) (preparation of)  
 RN 30310-36-2 CAPLUS  
 CN 2,2'-Biselenophene, 5-nitro- (8CI) (CA INDEX NAME)



RN 30310-37-3 CAPLUS  
 CN 2,2'-Biselenophene, 3-nitro- (8CI) (CA INDEX NAME)

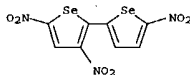


RN 30310-38-4 CAPLUS  
 CN 2,2'-Biselenophene, 3,5'-dinitro- (8CI) (CA INDEX NAME)

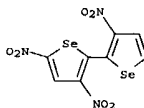


RN 30310-39-5 CAPLUS  
 CN 2,2'-Biselenophene, 3,5,5'-trinitro- (8CI) (CA INDEX NAME)

L4 ANSWER 55 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



RN 30310-40-8 CAPLUS  
 CN 2,2'-Biselenophene, 3,3',5-trinitro- (8CI) (CA INDEX NAME)



L4 ANSWER 56 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1971:34821 CAPLUS

DOCUMENT NUMBER: 74:34821

TITLE: Biselenophenes. III. Determination of the

ionization

constants of 5'-substituted 2,2'-bithiophene- and

2,2'-biselenophene-5-carboxylic acids

AUTHOR(S): Dell'Erba, Carlo; Spinelli, Domenico; Garbarino,

Giacomo

CORPORATE SOURCE: Ist. Chim. Org., Univ. Genova, Genova, Italy

SOURCE: Gazzetta Chimica Italiana (1970), 100(8-9), 777-87

CODEN: GCITA9; ISSN: 0016-5603

DOCUMENT TYPE: Journal

LANGUAGE: Italian

GI For diagram(s), see printed CA Issue.

AB The transmission of electronic effects through 2,2'-bithiophenes (e.g. I) and 2,2'-biselenophenes (e.g. II) is similar to that of 4-biphenylcarboxylic acids (III). The  $\sigma$  values for the 5-substituted-2-thienyl and selenophene-2-yl groups vary between -0.03

and

+0.29 for the I and between -0.03 and +0.24 for the II.

IT 30979-86-3 30979-87-4 30979-88-5

30979-89-6 30979-90-9 30979-91-0

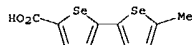
30979-92-1 31119-50-3

RL: PRP (Properties)

(ionization consts. of)

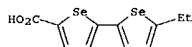
RN 30979-86-3 CAPLUS

CN [2,2'-Biselenophene]-5-carboxylic acid, 5'-methyl- (8CI) (CA INDEX NAME)



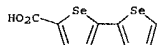
RN 30979-87-4 CAPLUS

CN [2,2'-Biselenophene]-5-carboxylic acid, 5'-ethyl- (8CI) (CA INDEX NAME)



RN 30979-88-5 CAPLUS

CN [2,2'-Biselenophene]-5-carboxylic acid (8CI) (CA INDEX NAME)



RN 30979-89-6 CAPLUS

CN [2,2'-Biselenophene]-5-carboxylic acid, 5'-bromo- (8CI) (CA INDEX NAME)

L4 ANSWER 57 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1970:21558 CAPLUS

DOCUMENT NUMBER: 72:21558

TITLE: Bithiophenes and biselenophenes

AUTHOR(S): Dell'Erba, Carlo

CORPORATE SOURCE: Univ. Genova, Genoa, Italy

SOURCE: Corsi e Seminari di Chimica, Consiglio Nazionale

delle

Ricerche e Fondazione F. Giordani (1968), (10), 175-6

CODEN: CSECB7; ISSN: 0579-0670

DOCUMENT TYPE: Journal

LANGUAGE: Italian

GI For diagram(s), see printed CA Issue.

AB 3,3'-Biselenophene (I) is prepared from 3-selenophene-ylithium and

SnCl4 at

-70°. 2,2'-Dinitro[3,3'-biselenophene]-4,4'-dicarboxylic acid is

prepared and its optical isomerism examined. The halogenation,

acetylation,

formylation, and nitration of 2,2'-biselenophene (II) is studied;

electrophilic attack is facilitated at the 5- and 5'-positions. The

transmission of electronic effects across 2 selenophene rings is examined

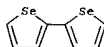
IT 6239-48-1P

RL: SPN (Synthetic preparation); PREP (Preparation)

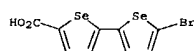
(preparation of)

RN 6239-48-1 CAPLUS

CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)

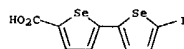


L4 ANSWER 56 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



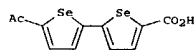
RN 30979-90-9 CAPLUS

CN [2,2'-Biselenophene]-5-carboxylic acid, 5'-iodo- (8CI) (CA INDEX NAME)



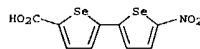
RN 30979-91-0 CAPLUS

CN [2,2'-Biselenophene]-5-carboxylic acid, 5'-acetyl- (8CI) (CA INDEX NAME)



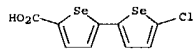
RN 30979-92-1 CAPLUS

CN [2,2'-Biselenophene]-5-carboxylic acid, 5'-nitro- (8CI) (CA INDEX NAME)



RN 31119-50-3 CAPLUS

CN [2,2'-Biselenophene]-5-carboxylic acid, 5'-chloro- (8CI) (CA INDEX NAME)



L4 ANSWER 58 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN

ACCESSION NUMBER: 1966:412147 CAPLUS

DOCUMENT NUMBER: 65:12147

ORIGINAL REFERENCE NO.: 65:2204a-c

TITLE: Synthesis of chlorinated pyrylium salts

AUTHOR(S): Roedig, A.; Schlosser, M.; Renk, H. A.

CORPORATE SOURCE: Univ. Wuerzburg, Germany

SOURCE: Angew. Chem. Intern. Ed., Engl. (1966), 5(4), 418-19

DOCUMENT TYPE: Journal

LANGUAGE: English

GI For diagram(s), see printed CA Issue.

AB Chlorinated pentadienals and pentadienones (I) gave complex pyrylium salts

(II) when warmed with Lewis acids 10-15 hrs. at 40-50°. The

compds. thus prepared are given in the table. Decompn; R, R', Anion,

point, %Yield; Cl, H, SnCl6-, 1701-1.5°, 87; 27.6; H, H, FeCl4,

155-60°, 13; Cl, Ph, SnCl6-, 177-83°, 40.9; SnCl6-,

176-80°, 17.2; Ph, H, SnCl6-, 118-20°, 60; Ph, Ph, FeCl4-,

219-22°, 52; SbCl6-, 128-33°, 28.9; ClO4-, 240°, 20;

IT 6239-50-5, 2,2'-Biselenophene, 3,3'-dinitro- 6239-51-6,

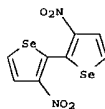
2,2'-Biselenophene, 5,5'-dinitro- 6239-52-7, 2,2'-Biselenophene,

3,3',5,5'-tetranitro-

(preparation of)

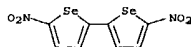
RN 6239-50-5 CAPLUS

CN 2,2'-Biselenophene, 3,3'-dinitro- (7CI, 8CI) (CA INDEX NAME)



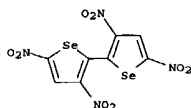
RN 6239-51-6 CAPLUS

CN 2,2'-Biselenophene, 5,5'-dinitro- (7CI, 8CI) (CA INDEX NAME)



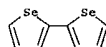
RN 6239-52-7 CAPLUS

CN 2,2'-Biselenophene, 3,3',5,5'-tetranitro- (7CI, 8CI) (CA INDEX NAME)

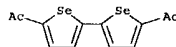


L4 ANSWER 58 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)

L4 ANSWER 59 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1966:412146 CAPLUS  
 DOCUMENT NUMBER: 65:12146  
 ORIGINAL REFERENCE NO.: 65:2203h,2204a  
 TITLE: 2,2-Bis(selenophene-yl) and some of its derivatives  
 AUTHOR(S): Chierici, Luigi; Dell'Erba, Carlo; Guareschi, Alessandro; Spinelli, Domenico  
 CORPORATE SOURCE: Univ. Genoa  
 SOURCE: Ric. Sci., Rend., Sez. A (1965), 8(6), 1537-9  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Italian  
 GI For diagram(s), see printed CA Issue.  
 AB The title compound, m. 49°, was prepared in 76% yield by refluxing 1 mole 2-iodoselenophene in xylene with 3.5 g. atomic activated Cu 8 hrs.  
 In analogous manner the following I were obtained (substrate, reaction time, R, m.p., and % yield given): 2-iodo-5-acetylselenophene, 12 hrs., 5,5'-(AcO)2, 221°, 55; 2-bromo-3-nitroselenophene, 12 hrs., 3,3'-(NO)2, 203°, 70; 2-iodo-5-nitroselenophene, 12 hrs., 5,5'-(NO)2, 262°, 35; 2-bromo-3,5-dinitroselenophene, 8 hrs., 3,3',5,5'-(NO)4, 184°, 75. UV spectra were tabulated.  
 IT 6239-48-1, 2,2'-Biselenophene (derivative.)  
 RN 6239-48-1 CAPLUS  
 CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)

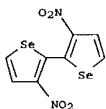


IT 6239-49-2, 2,2'-Biselenophene, 5,5'-diacetyl- 6239-50-5, 2,2'-Biselenophene, 3,3'-dinitro- 6239-51-6, 2,2'-Biselenophene, 5,5'-dinitro- 6239-52-7, 2,2'-Biselenophene, 3,3',5,5'-tetranitro- (preparation of)  
 RN 6239-49-2 CAPLUS  
 CN 2,2'-Biselenophene, 5,5'-diacetyl- (7CI, 8CI) (CA INDEX NAME)

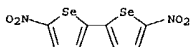


RN 6239-50-5 CAPLUS  
 CN 2,2'-Biselenophene, 3,3'-dinitro- (7CI, 8CI) (CA INDEX NAME)

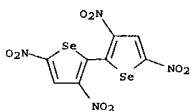
L4 ANSWER 59 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN (Continued)



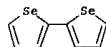
RN 6239-51-6 CAPLUS  
 CN 2,2'-Biselenophene, 5,5'-dinitro- (7CI, 8CI) (CA INDEX NAME)



RN 6239-52-7 CAPLUS  
 CN 2,2'-Biselenophene, 3,3',5,5'-tetranitro- (7CI, 8CI) (CA INDEX NAME)



L4 ANSWER 60 OF 60 CAPLUS COPYRIGHT 2004 ACS on STN  
 ACCESSION NUMBER: 1966:412145 CAPLUS  
 DOCUMENT NUMBER: 65:12145  
 ORIGINAL REFERENCE NO.: 65:2203g-h  
 TITLE: 3,6-Dichlorocarbazole  
 AUTHOR(S): Lopatinakii, V. P.; Zhrebtssov, I. P.; Vereshchagina, S. K.  
 CORPORATE SOURCE: S. M. Kirov Polytech. Inst., Tomsk  
 SOURCE: Metody Polucheniya Khimicheskikh Reaktivov i Preparatov (1964), No. 11, 56-7  
 CODEN: MPRPAT; ISSN: 0539-5143  
 DOCUMENT TYPE: Journal  
 LANGUAGE: Russian  
 AB 3,6-Dichlorocarbazole (I) is obtained by the action of SO2Cl2 on carbazole  
 in CHCl3 solution; 32% yield, m. 203-5° (HOAc, EtOH).  
 IT 6239-48-1, 2,2'-Biselenophene (derivative.)  
 RN 6239-48-1 CAPLUS  
 CN 2,2'-Biselenophene (7CI, 8CI, 9CI) (CA INDEX NAME)



IT 6239-49-2, 2,2'-Biselenophene, 5,5'-diacetyl- (preparation of)  
 RN 6239-49-2 CAPLUS  
 CN 2,2'-Biselenophene, 5,5'-diacetyl- (7CI, 8CI) (CA INDEX NAME)

